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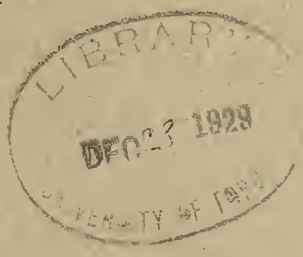
PROCEEDINGS
OHIO STATE
EDUCATIONAL CONFERENCE

NINTH ANNUAL SESSION

THURSDAY, FRIDAY, AND SATURDAY
APRIL 4, 5, AND 6, 1929



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COLUMBUS - - - - 1929

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PROCEEDINGS

OF THE

OHIO STATE EDUCATIONAL CONFERENCE

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NINTH ANNUAL SESSION

Keynote: Evaluating Education

THE OHIO STATE UNIVERSITY
COLUMBUS - - - 1929

OHIO STATE UNIVERSITY

TENTH ANNUAL EDUCATIONAL CONFERENCE

April 3, 4, 5, 1930

Keynote: Reaching the Individual

GREETINGS

A FEW years since, Dr. Learned studied systems of secondary education in Europe and America and found a contrast with the merit lodged in the European system. His indictment of our practices and diverse aims in the secondary field was quite startling and provoked extensive efforts to appraise anew and to justify the American educational programs.

The conception of education for all and the thought that the public owes to every child the complete opportunity to develop to the extent of his ability are distinctly American. On this platform our great public-school system and, in fact, the American social order rest.

Comparative analysis of European and American educational processes and their philosophical roots has brought forward attackers and defenders, and such a critical study of education and the educational process is now on in this country as the world never before witnessed. Already some conceptions have been routed and others fortified. Generally, however, we are driven to a study of social and political fundamentals and to a necessity for showing that our prevalent processes are a direct result of such study. We are not finding it easy to do and many have to reorient our thinking about what constitutes education and who may profit thereby.

All are agreed that our education should show results. Formerly it produced a gentleman, later a minister or lawyer, later an agriculturist, an engineer, a teacher, a business man. The emphasis has seemingly changed from culture to ability to make a living, and educational offerings have multiplied to give practical training and skills. We wonder whether we have been right in shifting the aim to the practical and making culture, if it is in the scheme at all, a by-product.

We now run to the social; we must educate for service. Self-effacement, life for the community, social service—these are our newer aims and are searching the age-old educational formulae and processes. More and more do we come to believe that the aim in all education must be fitting one for a place in the social order. That is inclusive and exclusive; it is the quest of the ideal. Along with it

goes the practical, the industrial aim. We are torn in many directions. The voices are many and discordant. We are in the era of test and question; from alpha to omega our educational practices are under scrutiny, appraisement, and renovation. Until we solve more clearly the ways and means, our present programs will continue under fire, and our thinking will be in confusion.

May the Ninth Educational Conference give us some light, help us to learn what knowledge is of most worth, and aid us in raising an educational objective and formulating the procedure by which it may be reached! The University extends greetings, and tenders all its facilities for the pleasure and advantage of those who will be in attendance.

George W. Rightmire
President

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GENERAL SESSIONS

General Sessions

Adjustment through Education

George W. Rightmire[1]

The school and college are fundamental in American life; we have brought them all the way from Plymouth Rock and Massachusetts Bay. In different eras they have been somewhat differing institutions but they have always been close to the people and objects of primary interest and support. The progress of the school has been coeval with that of the people themselves; it is a universal feature of our civilization, and the story of the development of the school in one state differs little from that in another, especially in the northern belt. Until the close of the Civil War, the common or grade school was much the same throughout the country and had changed very little from the earliest times; but the war being ended, our social conditions and industrial and commercial relations became objects of serious study, and the bearing of education thereon enlisted much thought.

SOME EDUCATIONAL HISTORY

A glance at the elementary school of that time shows that there were few subjects of study and that these were taught in a rather elementary fashion; reading, writing, arithmetic, spelling, and language made up the entire curriculum—all pure drill subjects. There were no ornaments or trimmings, the subjects taught were those which were learned for immediate and practical use. This was the keynote of the times.

The next thirty years was a period of great prosperity and expansion in all material directions—in industry, in business, in transportation—and the period was also marked by a considerable social development. To meet these changes going on in the lives of the people, the common-school curriculum was expanded to include some content subjects, chiefly geography, history, literature, civics, manners and conduct, some nature study, agriculture, and health study. These are, in nearly every case, purely informational subjects which the

[1] President, Ohio State University.

changing social condition seemed to require. The motto which expresses the educational thought of this period is "Knowledge is power."

The next thirty years, beginning about the close of the Spanish War and coming down to the present time, is a time of developing international contacts and responsibilities, of tremendous material expansion, of development of natural resources, of quickened international relations, of the growth of cities, and of the flow of population from rural to urban communities; a time when individual genius and activity reached tremendous promise and brought the individual into swift prominence. It was a period when alertness, ability, and enterprise took the American into all quarters of the globe and rewarded him for his self-reliance and initiative. The elementary-school curriculum necessarily responded to these conditions, and in addition to the subjects already mentioned, we find the kindergarten school set up, and music, drawing, manual arts, domestic arts, gardening, vocational subjects, plays and games, and civic activities introduced into the life of the school. Obviously, these are expression subjects and were intended to elicit from the student such originality and practical genius as he might possess in one direction or another. Here was the opportunity to manifest his personality as distinguished from the opportunity of the earlier curricula to master a few drill subjects for immediate practical use and some information subjects to enrich the mind and give knowledge.

It seems clear that this expansion of the curriculum was due to an appreciation of the expanding life of the people and was intended to give the student the training and development which he would need as a responsible citizen. The days of settlement, of pioneering, of hard reality are reflected in the group of drill subjects which were expected to enable one to carry on the small dealings which made up his sales and purchases, his contacts with others, to keep, in a way, in touch with what was going on in the world, and to read the few books of the family library. Hard utility featured this program.

A desire for more learning or information appeared in the second period, information which would give one an understanding of what had gone on in the world and what was then going on, knowledge which would equip one for social contacts and for an enriched life. In the third period, the new subjects were intended to enable the pupil to express himself, to show his native capacity in a variety of directions, to add a species of refinement or worth-whileness to his activities, and to achieve personality. These changes evidently show the purpose of the people of these times to make school life more nearly reflect actual life and, so far as possible, to make it a

preparation therefor. The school thus moved nearer toward reality. A somewhat similar development may be traced in the high school.

Until the middle eighties the high school was thought of principally as a place in which to prepare for college. The colleges of the earlier times were of the classic type principally, and the approach to them, therefore, lay through the classics, some humanitarian studies, and mathematics. It became more and more evident, however, that many of the pupils who went through the high school did not go to college and that they seemed to emerge from the high schools without preparation for anything of a practical or everyday nature. The high-school program, therefore, came in for considerable criticism, and by the middle eighties this had reached a vociferous stage. The conflict was waged between the cultural and the practical, the useful and the theoretical, and the taxpayers had no difficulty in convincing themselves that the high schools should forthwith do something for vocational training. Let them continue to be preparatory to college for the few who desired to go, but let them become principally a training school for youth in direct preparation for the activities of life. This was a rather bitter struggle, but the vocationalists won, and at once the high-school curriculum was expanded by the addition of such subjects as bookkeeping, typewriting, stenography, penmanship, and commercial law. A mere inspection of these subjects shows that they were introduced for immediate use upon leaving the high school.

The growth of the cities and the training in the high schools in the knowledge and the skills which would be used in making a living swelled the attendance of these schools immensely. They came to be thought of as the "people's colleges," and the community took great pride in them; indeed, the high school has always been locally controlled. It has been progressively designed to enable the youth at about 18 to step into the productive processes of life and make his own living, starting at a little higher point than he could if he entered industry without the high-school experience. In some places so-called "technical" high schools were established, intended to teach only vocational branches of learning; but at this point the insistent desire for general knowledge and broader training came to the front, and it was not long before the technical high school also taught languages, the social sciences, and other subjects which may be regarded as largely cultural. Most of the technical high schools have gone through this transformation and expansion.

During the last quarter century the high schools have also felt the urge for more content subjects and more expression subjects—the same urge which the elementary school had experienced earlier.

Hence, a long list of subjects was added to the curriculum—journalism, public speaking, mechanical and free-hand drawing, agriculture, general science—in larger installments, printing, dietetics, home economics, design, hygiene, physical education, singing, band practice, and orchestra—all in addition to the subjects previously offered.

The growth of attendance in high schools, the spread of vocational and expression activities, and the ever increasing numbers of those who complete the work and are graduated, constitute a great social phenomenon, the like of which has never occurred in any other part of the world. Upwards of 50 percent of the youth who reach high-school age are in actual attendance in these high schools, while in England, France, and Germany not more than 8 percent of the eligible youth are in attendance. In Europe there is a careful selection of the youth with an evident purpose of excluding from the high school while in this country in many states there is a compulsory education law which requires attendance in the public schools up to the age of sixteen, even eighteen, and normally eighteen is the finishing age in the high school. So, in Europe we see a studied exclusion while in the United States we see a compulsory inclusion of the student in the public schools of a secondary nature. The thought here has been that as industry, commerce, domestic life, and the social order generally are undergoing changes and developments, the public schools should keep pace, and their curricula should reflect life as it is being lived at the time and should constitute in large measure a preparation therefor. The schools are regarded as social agencies.

Let us now look briefly at the development of the state-supported college and university. Fifty years ago the college was largely devoted to the study of the classics and humanities, with the thought of turning out gentlemen and providing training for the professions of the law and the ministry. The college was to impart culture and general appreciation of the amenities of life but it was not considered a practical institution to any large extent. However, at that time came the beginnings of the so-called land-grant colleges, based upon grants of land made by the federal government in each of the states. In many cases these land-grant colleges have developed into the state university; this is the case in Ohio. The purpose of this institution was avowedly scientific and vocational, being founded for the teaching of two neglected branches of learning, agriculture, and the mechanic arts.

But the doors were hardly opened when an agitation began to include cultural studies. After a few years, although the purposes of these colleges still remained fundamentally to teach agriculture

and the mechanic arts, a large addition had taken place in their curricula in the form of languages, the social sciences, and general sciences. Presently teacher training was added, and training for business, likewise pharmacy, veterinary medicine, and the professions of law, medicine, and dentistry, all side by side with the studies of the arts and sciences. It was the land-grant college that first introduced serious study by the laboratory or experimental method. That method, highly developed and adapted to new uses, has been extended to the teaching of all the professions, to technical education, and has been woven into the methods of teaching the liberalizing studies as well. In the college area no single educational institution has had the wide and deep influence that has been exerted by the land-grant college and its successors in preparing young men and women for a contributing phase in everyday life.

This brief review indicates that the public school on all levels and the state university, which is its continuation, have constantly been orienting their offerings to the changing and developing social order. The most cursory view of the development of these institutions shows a continuous effort to make them the instruments of society in preparing youth to find a place in the industrial and social world and to fit harmoniously and productively into the life of the community. This general purpose is entirely clear, and there is a wide belief that it has been accomplished. Further strong evidence of the belief that public schools and colleges present the way into the life of the community may be found in the ever growing attendance of these institutions.

Thinking now of Ohio alone, and taking the years 1900 to 1925, the population of the state increased by 52 percent while the attendance in the elementary schools increased 36 percent, in the high schools 280 percent, and in the colleges 40 percent! In actual numbers this means that in 1925, when the population of Ohio was approaching six and a half millions, over a million students were in the elementary schools, 225,000 in high schools, and that those high schools graduated 30,000 students. At the same time the attendance in the colleges of the state was over 38,000. In the last ten years of that quarter century, while the population of the state increased one-fourth, the elementary-school population increased at the same rate; but the high-school population doubled, the number of high-school graduates doubled, the college population doubled, and more than 50 percent of the people of high-school age were in actual attendance in the high schools. These are conclusive evidences of the firm belief of the people of Ohio in the efficacy of their educational

institutions and show their purpose of keeping these schools as closely adapted as may be to the actual needs of life.

THIS IS A QUESTIONING ERA

Notwithstanding these weighty evidences of satisfaction, there are now many indications of unrest and some degree of disappointment, and questions are being asked both by the people and by the educators. The constantly rising cost of education and the occasions upon which appropriations of public money are called for present the opportunity for interrogation. Some doubts are being expressed as to the validity and integrity of features of the educational process. The reflection is sometimes made that too many people are in the schools and colleges, and ever and anon the query is expressed whether we are on the right track, whether the universality of education is creating a better social order. In the presence of this question it seems to be necessary to make a new appraisement of our educational processes and theories and to determine, under present conditions and indicated conditions of society, both the possibility and the propriety of going on with the development on present lines or in what direction development should proceed. The whole social organization must be carefully studied in order to answer these questions, and to plot the curve of future development, but in this paper only a few thoughts on the subject will receive comment.

In the first place, it is said that education must be evaluated in terms of the social order and that we must seek means for such measurement. We find that the early common-school curriculum was made for groups of people who were occupied almost completely with the work and the life of the immediate community. Travel was almost unheard of; strangers were looked upon generally with curiosity. There was not much mingling of the people, not much international news; news of even the domestic events a few hundred miles away came slowly, if at all. In the second period of expansion of the public schools there was a much greater stir among the population, and it was thought much more necessary to know what had gone on in other parts of the world and at other times and what might at that time be elsewhere in progress. In other words, knowledge began to be sought for because it seemed to be called into daily use. Later the expression subjects were put into the school, for it had become apparent from the growth and multiplication of the social activities outside that these subjects were also worth while.

The purpose always seemed to be to keep up with the pace of development of the people, but there was no thought of anticipating

a new kind of society or of guiding the youth to undertake a new social venture. It seems clear that there was no particular training in the schools of the time which prepared the people for the changes taking place in this country after the Civil War or after the Spanish War although it is thoroughly understood that both those eras were periods of tremendous expansion in many new directions. But the people who brought about those changes were those whose school education had long since been finished and whose experiences in life had much more to do with the creation of these social, industrial, and economic changes than anything which had been taught them while they were students. We are likely to make a mistake in thinking that what is taught in the schools constitutes the sum-total of the education of the people. This is certainly far wrong. We who have been through the public schools and the colleges always admit that the education which we brought away was largely a beginning and, in considerable part, has long since disappeared. The vital thing was the training experience furnished us.

It must be admitted that the youth of that early period were not trained particularly to experience and profit by social change, social improvement, and economic and industrial uncertainty and progress. The training received, however, left some permanent traces upon the mentality and, in some way, enabled them to appraise situations and appreciate their own and community interests and to go forward progressively. However, some of the subject-matter taught in the schools may have actually been put into use afterwards in life, and so a direct contribution may have taken place. But it must not be forgotten that changes in the social order which are continually taking place are promoted by people who have long since passed the school age, and, therefore, the purpose of the school so far seems to have been to appreciate as far as possible the social order of the present.

There is little thought in the schools of teaching a new social order or even of actually preparing for some new social status. Indeed, some of the men who have made the profoundest changes in the social order are men with small education. We know that the activities and abilities of such men as Edison and Ford have most profoundly influenced the social development of our times; many others, too, could be mentioned, none of whom can claim much benefit from the schooling which he received. Likewise, the profound influence which Lincoln exerted upon the political and the social order is hardly traceable to the influence of the school. The schools sometimes take themselves too seriously in assuming that what they teach and the experience they give to youth will be the only vital

influence inducing social progress. We must come to see clearly that the actual teaching in the schools is directly responsible for perhaps only a small part of our social, industrial, and economic progress but that the function of the school is to prepare the student, so far as possible, for fitting into the social order and progressively making a place for himself therein. When we have limited the function of the public school as indicated, we still have to face many questions concerning its efficiency and its processes. Obviously, what is accomplished in the public schools will depend upon the teaching and the subjects taught. For the moment let us notice the matter of the curriculum.

WHAT SHOULD THE SCHOOLS TEACH?

At this point a difficulty arises. It used to be the general belief, and it is still rather widely accepted, that strenuous mental activity in one field develops a kind of mental ability which is extremely useful in taking up another field; that is, mental accomplishment in any direction furnishes an ability for going on in some other direction. But the psychologists deny this and say that they have discovered that there is little, if any, transfer of ability and that, according to their discoveries, study by the student in one field, such as mathematics, produces no mental condition which makes him more able to carry on thought in another field, say history; all this on the ground that there is no such thing as "faculty psychology." This would make every subject in the curriculum vocational!

Some psychologists, however, do admit that in studying a subject a method is developed and that this method of "attack" may be transferable, and, therefore, that if, in studying mathematics, we learn how to achieve that subject, the way in which we did it may be useful later in study in the field of history. I suppose this means that we have been cultivating what is usually spoken of as reasoning, developing an ability to see things as they are and to make comparisons and deductions. If some such statement be not true, then there are many situations in life for which we never could be prepared and, upon meeting which, we would be unable to adapt ourselves. What we hope the student derives from his school career is development of understanding, a questioning attitude, and the ability to make comparisons and deductions which will enable him to orient himself in new situations. If he does not have this ability in larger measure from his school courses, then he has derived very little from that exercise. However, the case is not so hopeless. Whether there is actual transfer of ability or not, it seems entirely clear that the ability

to adjust and initiate has received tremendous enlargement and impetus by the school process.

Another factor of importance at this point is that, while a student, one is being actually educated from many sources other than the school. One is making adjustments every day, coming into first-hand contact with life, and amassing many facts and experiences upon which the teaching of the schools may play and which may integrate with the school experience. We sometimes speak as if the student, upon completing the school, is for the first time seeing real life. In most cases this is untrue. He may not yet have made a living but he has certainly seen much of the living of other people, and the important influence of actual contact of the student with life as it is, at home, in the community and abroad, is very great and can never be left out of the equation. We think that the school is a developing influence in the lives of the people, but we must not make the mistake of thinking that it is the only educational influence.

There is continual inquiry and investigation of the performance of the schools going on inside the schools themselves, prompted by the teachers and by the authorities and by the people and friends outside. We are not yet quite certain as to the ultimate effect of school training upon the youth. We do not know just how the boy or girl would have turned out if he had had no such school experience or if he had had experience in an entirely different school. All these are unknown factors in the case, and we are desperately struggling today to evaluate our school processes and ascertain what the net influence of one or another subject or grouping of subjects in a curriculum may be on the life of the student afterwards, as well as upon his development while still a student. We are still uncertain as to whether his professed inclinations should be entirely regarded in selecting the subjects of study, or whether he should be required to take some "drudge" subjects for the experience he would thereby acquire, or just how this curriculum should be set up for him. Generally, we are endeavoring to ascertain the tendencies of the student and his desires, then we consider the purposes for which the training may be required. In some cases we can then prescribe with definite assurance, but in many even then our prescription must be one based to a large extent upon hope.

One of the great curriculum studies of recent years is being carried forward in engineering education. A strong committee studied the subject for three years and submitted a tentative report. It then continued the study and expects to submit a further report this year, after five years of extensive and intelligent investigation. More time

will be needed to complete the study, and even then there promises to be many dissenters in the end. In other fields the agitation is similar, and curriculum building is an ever present activity. Many able minds are directing themselves to this matter, and much has been lately written on the subject, all of which is of the greatest interest.

But I am thinking particularly, now, of a recent symposium on "Next Steps for Curriculum Makers." From the theories expressed, permit me to make some quotations. Professor A said:

> We are beginning to feel the need of a comprehensive theory to direct our scientific investigations. This theory, which I have tried to indicate, must take as its point of departure the changes which have been wrought by science, in order that we may achieve a new conception of how intelligence is to function for the betterment of human life. With reference to curriculum construction, then, the most important, outstanding next step is the application of such a conception to the selection and organization of subject-matter, so as to make the curriculum contribute to the disposition and power to see life steadily and see it whole in certain terms of the circumstances and opportunities of the modern age.

When connected with the previous discussion by Professor A, which I have not quoted, this paragraph is full of meaning.

Professor B concludes his discussion as follows:

> The first step is the construction of a comprehensive curriculum theory, with its roots in a scientific and philosophic study, first, of American civilization, second, of the needs, interests, and abilities of children—a theory, therefore, in which both American life and child life are comprehended and in which each is seen as an integrated whole.

This he understands to mean the same as the language quoted above from Professor A. He also advocates a second step, which is

> the exploration of the characteristics and the changing needs of American culture, the discovery of the chief concepts that guide intelligent thinking about that culture, and the assembling of a curriculum of rich experiences, through which children can develop a tolerant understanding of it, and grow in the capacity to express themselves about it. The activities and materials of the curriculum, therefore, are to be based upon the known or predicted concepts, meanings, generalizations, and trends governing intelligent conduct in contemporary America. These concepts and generalizations can be found only by the most thoroughgoing analysis of American civilization. It is an essential element of my point of view, therefore, that a comprehensive theory can be erected only through a far-reaching study of American culture in its historical and world setting.

Those of you who have studied the writings of the late Professor Albion W. Small will see almost reproduced here Small's suggestion for a program of sociological study.

Professor C concluded as follows:

To develop curricula which will provide experiences and training in ways of behaving in matters of large and continuing social importance is, I repeat, the most pressing problem in curriculum making, following the development of the appropriate attitude or outlook on education as a whole. All the elements entering into the attitude suggested by Professor A are compelling in their emphasis upon the importance of provision for selective thinking and acting. This attitude would have man free—free to control his own thought and action. But such freedom in a social world imposes responsibility for the consequences of one's thought and action. Without experience in selective thinking and action, with only ignorance of the probable results of alternative courses of action, one is a slave and a menace. He is not free, in the larger sense, at all. Together with participation in selective thinking and acting, should be brought to bear the knowledge of consequences of various types of action, accumulated through the experience of man as represented by the content of science, social studies, and the arts. Through participating activities, guided by the combination of one's own intelligence and the experience of the race, one's knowledge becomes wisdom–working knowledge which includes awareness of the probable results of optional courses of conduct and their relative worths.

The discussion is continued by Professor D. He approves Professor A's contention that man must learn to assume responsibility for his future and that his criteria of values becomes mundane and experimental, instead of transcendental and final:

but since we now recognize thousands of kinds of these values, as unlike each other as, for instance, high ideals of civic duty and competency in a specific trade, excellent habits of oral hygiene and appreciative tolerance of the religious faiths of our fellow-men, love of good books and devotion to outdoor recreation, or knowledge of African geography and ability readily to write fairly good letters, surely the most urgent next step in curriculum construction is somehow to schematize, array, and exhibit these values, so described in explicit and realistic language that all careful students may know exactly what is meant. What kinds or stages and how much of such values can best be realized through education of any sort? And what kinds and how much of such values should properly be realized through school, as distinguished from other kinds of education? All this leaves unsolved such large and obvious problems as relativity of social, and by consequence, educational values.

In this symposium Professor A arrived at a rather illuminating principle, the application of which to the study and teaching of history

and literature he illustrates and the point of view of which he sets forth in his illustration as eminently workable. But in the discussions and the criticisms of Professor A's program I find nothing that looks concrete; in fact, there seems to be disagreement in thought and a comprehensive generality of expression and proposal that makes a concrete program seem very remote. Until the thinking about the next steps in curriculum making can become less nebulous and can present some kind of program upon which the actual curriculum makers can lay hold and utilize, the next step, so far as these criticisms are concerned, is not only uncertain but practically impossible. I can see much hope in Professor A's suggestions and thought but I am left practically hopeless in the presence of the criticisms and conclusions of others quoted above. The present curriculum seems in slight danger of readjustment through such theories.

Many other contributions have in recent times been made to this matter of curriculum making, and I have spent this time upon the subject on this occasion because adjustment of the individual to the social order and the problems of life generally, if possible to be made through education, will take place largely because of the curricula through which, as students, the future citizens pass. It is an immensely important matter, in fact, it is final in the determination of whether such adjustment can be made through education. For the immediate future we seem destined to go on with the curriculum about as it is. However, the making and theorizing must continue, since so many obvious cases of maladjustment, both to the school work and to the social order outside, call for progressive thought and such remedy as curricular improvements may provide. There is need for curriculum improvement, but let us go on as we are rather than enter an era of pure tinkering and meanwhile let us pray that the search for a fundamental platform will soon succeed. The science of education can establish itself among the other accepted sciences by making this contribution.

AIMS OF THE SCHOOLS

The discussion of the curriculum naturally suggests the question: What should be the aim or aims of the school? The answer thereto falls under several heads. First, should the schools aim at culture through the agency of what are usually called cultural studies? Is it through cultural education that one can best be trained to fit into the social order, to adjust himself to the institutions, methods, and needs of the times, and to fulfill most adequately the requirements of life? If such course is desirable, should all students be required to take it?

Evidently this would not do, for it is well known that all students are not adapted to the same species of effort. Therefore, while some might go forward brilliantly with a cultural course, others would fail miserably, and most of them would be entirely discontented with the effort. The so-called cultural subjects, or the humanities, may be pursued for the sole purpose of enabling the student to become a teacher, for instance, which makes of them really a vocational group. Almost every subject is pursued with the idea that it will cause one to do, or to produce, or to express himself, and therefore, in a way, has practical purposes involved. It is thought also that almost any study which intrigues one's interest and enlists one's hearty attention and active effort can be made cultural. In such cases culture may result as a by-product, an incidental thing. But, these results aside and taking the general understanding of the term, very few persons would be willing to devote themselves to a strictly cultural course. Very few communities would be satisfied with a curriculum shaped with this thought chiefly in mind.

A grouping of studies to promote culture per se would find little favor anywhere; that matter was fought out in the high schools in the late eighties and the conflict ended by introducing a number of so-called vocational subjects among the cultural subjects already there. It was fought out also in the land-grant colleges in the late seventies and resulted in introducing some so-called cultural courses among the technical and professional and scientific courses already in use. Those two illustrations stand for the theory that there must be a mixture of vocational and cultural subjects in order to give the desired balance. Further illustration may be drawn from the experience of the technical high school established in some of the larger communities, where, after a short period of operation, the very people who had clamored for the creation of a school in which nothing except the technical should be taught, came back asking for the introduction of languages, social sciences, and other studies which they knew could not have anything particularly vocational in their effect. By the same token, it would therefore seem that a curriculum should not be set up which is entirely vocational, and so far the answer seems to be in favor of the mingling of these two elements in education.

Another proposal is that the schools should train especially for citizenship, notably so in this country. That sounds weighty, for citizenship here is a great responsibility. We are all rulers, we are all ruled; we are all law-makers, law-enforcers and at the same time subjects of the law; we are all, or should be, both actors and acted-upon in this business of government. Thus, it seems highly essential

that the schools should devote specific attention to instruction in government, its purposes, its functions, and the part to be played by the citizen therein; it should be emphatically impressed upon the youth that their own participation in government at the earliest possible opportunity is a vital matter. Also, we speak freely of education for democracy, we say that education should be democratic, that in a democracy all will depend upon the community spirit, that democracy bears a close relationship to the lives of the people in the community and implies that they must stand or fall together in a cause in which each is assumed to be the master of his own fate. Now one can hardly be a master of his own fate unless he has the same civic opportunity as all others, and this civic opportunity should hardly come to him unless he has been found qualified through the educational processes for participation in government in the community.

Somehow the youth must be informed and impressed with the thought that democracy should mean, above all things else, equality of opportunity; this must be made a part of the fibre of every young American, and every older American should labor diligently to make this an actuality. The teaching and the practice must go hand in hand, and the practice will improve if the teaching is sufficiently emphasized. The belief is that no matter what else the curriculum may present to the student, it should indispensably present to him the opportunity to know the peculiarities of American life as distinguished from, for instance, life in European countries where the government is entirely different; he should know something of fundamental American institutions upon which our progress has been based through the years, and, accordingly, it seems clear that citizenship and the spirit of democracy should find an important place in the teachings of our public schools, both elementary and secondary, and in the colleges. Something more than singing and saluting the flag are required.

ELECTIVES

Whatever aims we set up for the public schools as being most effective in enabling the student afterwards to adjust himself in our social order, the process must be carried on through some kind of curriculum, and we now come to the question whether a curriculum made up largely of electives will well answer the purpose. This seems to be a late day to ask this question, but it is insistently being brought to the front, notwithstanding the fact that electives have been presented to students in more or less liberal measure for the past thirty-five years. A curriculum may be so literally sprinkled with

electives that it contains no inherent principle or aim or procedure and becomes a rope of sand; yet we believe that some liberty of electives is entirely desirable. The question always raised is about the extent of the freedom of electives. Without attempting to answer that question in detail, I want merely to refer to the report made by Dr. Learned through the Carnegie Foundation for the Advancement of Teaching. This report presented a study of the quality of the educational process in England, France, and Germany, on the one side, and the United States, on the other, in the secondary schools.

Dr. Learned's attack upon the system of electives of the American high school is vigorous and unrelenting and is supported by his study of the educational process as it goes on abroad in the three countries mentioned. He could hardly be surpassed in his denunciation of the results of the elective system, and much of what he says is as applicable to the university as it is to the high school. The comparison between the American secondary school and the European secondary school becomes in his hands a contrast entirely in favor of the European school. With much of his argument one can freely sympathize, for certainly experience teaches us that the business of electing needs limitation, but always it must be borne in mind that the school program in the United States is a social program, devoted to the welfare and development of all the people in the belief that such a program is the greatest support of democracy and the greatest hope of its development and perpetuity.

In this country, about 50 percent of the youth of high-school age is in high school while in these European countries not more than 8 percent of a similar group is found in the high school. Secondary education there has no democratic purpose but lends itself to the perpetuation of classes and aristocrats, depriving the mass of the people of what we regard as their rightful opportunity. Probably the best commentary on Dr. Learned's report is that made by Professor Judd of the University of Chicago in a recent address at Harvard University, entitled "The Inglis Lecture—1928." This eminent student finds the elective system as practiced in the American school fully justified. His discussion is a thrilling note of encouragement to all those who are thinking about the American public school.

INDUSTRIALISTS LAUD EDUCATION

The research staff of the National Education Association for some years has been looking at American education from many viewpoints, and its reports have bristled with statistics, studies, and conclusions. It finds further evidence as to the function of the schools

in aiding adjustment coming from the industries themselves. In the Bulletin for November, 1928, is found a study of schooling and earning power in which the great industrialist, Charles M. Schwab, is quoted. He is speaking of our chief "prosperity assets" and gives as the fifth and last "the most extensive free school system in the world, and the most general desire for education." In developing this thought Mr. Schwab says:

General education . . . gave us a public which could recognize and help make effective the new economic code; and it is from the ranks of the millions educated in our public schools that the future leadership must be drawn.

And while the training of scientists able to help manage a highly technical civilization is important, mere mechanical technique is not enough—as the Germans discovered. They confirmed for us our belief in the value of technical education; but they also convinced us that we are correct in stressing general education in the liberal arts.[2]

Dealing with this same thought, the research staff finds strong commendation in the statement of Herbert C. Hoover. He says:

At no time have we had more able leaders in economic life than today. At no time have we been more certain that the fibre and intelligence of our people furnish a vast reservoir of such leadership adequate to the future. But able administrators, skilled workers, professional and moral leaders cannot be made by birth or money. They cannot be selected by divine right or through bureaucracy. Nor can their ranks be filled from a limited class. Our leadership can be found and it will be sympathetic to our ideals if we maintain the decency and dignity of family life through a stable economic system; if we maintain free and universal education and thus provide them the open stair to leadership; if we maintain for every individual an equality of opportunity to attain that position in the community to which his character and ability entitle him. Then our supply of leadership will stream forward of its own impulse. It is in this insistence upon an equal chance and the free road to rise in leadership that our great American experiment has departed from those of history. It is our sure guarantee of the future. In its vast possibilities it is the hope of every mother for her boys and girls.

There seems to be no hesitation in crediting to our practice of general education the most of the results attained today in industry and commerce. A relationship between a considerable degree of general education and alertness and productiveness in industry and commerce is entirely logical.

We are further showing our faith in the public schools by advocating extended teaching of respect for law, the nature of law, the

[2] *The San Francisco Examiner*, Sunday, December 2, 1928. p. 1.

community of interests among all our people. We believe that education is the universal solvent, the unfailing adjuster of youth to life and of the social order to its members. We believe it to such an extent that we expect, in the not remote future, a vast improvement in law observance and civic appreciation. But here again, we must not forget that the generation responsible for our great economic prosperity were students in the schools twenty or more years ago, and that much of what they have been able to do is the outcome of what they have learned since. Yet, we are inevitably driven to believe that their ability to learn while doing, to adjust, and to make progress is a definite function of their training in the schools, without which most would never have been able to make this progress. Supporting illustrations are easy to find. The responsibility for immorality and disrespect for law, which have grown up with industrial prosperity, may be found not in anything the schools did or taught; the cause may lie in what they failed to do. Perhaps the obligations of righteousness and citizenship and brotherly love have not been stressed sufficiently, perhaps the emphasis of the schools has been too much upon the structure and externals of government rather than upon the spirit and motives of the citizen himself, and it is time that this should be changed.

QUALITY OF TEACHING

Now a word as to the teaching which will make education the effective agent of adjustment. Given the proper personality, the elementary teacher will need equipment in at least two directions. One is the subject-matter, and here the teacher should be very familiar with a considerably wider area than she will ever be called upon to teach. This wide knowledge is needed to furnish the background and to present the framework upon which the various subjects will arrange themselves. The other is the training in the principles of education and in the methods of presenting subject-matter, these to be underlaid with a generous study of educational psychology and the psychology of childhood. The present-day requirements for the training of the elementary teacher luckily are all in this direction.

The training of the secondary teacher will extend in the same direction, but it should go much farther in the matter of subject-matter or content material. Ordinarily, it does at the present time. The question remains whether it goes far enough. Everyone going into secondary teaching would find it worth while to try a more generous assignment of study in the social sciences, whether preparing

to become a teacher in these subjects or not. One can hardly fit adequately into the social order of the present time or make the intelligent progress that is expected of the teacher without having the social sciences pretty well in hand. If the prospective teacher is aiming to teach in particular fields, then it would be worth while not only to pursue the study of those fields extensively but to make excursions into cognate fields for the illumination which might come from them to the subjects to be taught. No teacher can get on satisfactorily if his knowledge does not extend outside of the immediate field in which his teaching labors lie; the student is entitled to all the sidelights which the teacher can throw on the subject under discussion. If criticism can properly be directed against the teacher-training programs of the present time, it would seem to be in this direction.

The early future should see an expansion of the curriculum of one's training to become a teacher in the direction of the subject-matter or content part of the program. The secondary schools of the state in the larger cities guard against inexperience in the teaching force and usually have a requirement of two or more years of teaching experience elsewhere before admission to the city system. The high schools of the smaller communities cannot be so insistent and, in a way, they will furnish the training ground for teachers who are ambitious to get into the larger city systems. There is no way to prevent this, and with the advanced requirements for teacher-training of the past few years and the rather close supervision which the teacher will receive in the smaller high schools, the effect of inexperience may be quickly overcome.

When we come to college and university teaching, however, we are in regions operated more or less without rule. There are many excellent teachers in these higher institutions, excellent in every sense of the term, but there are many others who come to the work without any conception of educational psychology, of the principles of education, and without teaching experience, whose sole equipment is in their knowledge of subject-matter, studied over a considerable period, and possibly ending with a doctor's degree. In many departments the possession of this degree is indispensable, and frequently it has seemed to be the case that the only requisite is the possession of the doctorate.

Now it is common experience that many persons who achieve the doctor's degree are not well fitted for teaching, and a lamentable amount of poor work has been perpetrated by such teachers. The Freshman has often found in the classroom a young man who has

the master's or the doctor's degree but who, in his ability to teach, is far below the corps of teachers which he has just left behind him in the high school. This clearly is not as it should be. We must take most vigorous measures in the large universities to amend the quality of the teaching done by many of the younger members of the staff. Until this accomplishment is vastly improved, the college and the university will not be furnishing to the students the training they will need in order to make them adaptable in the society and the industry of today, nor will their educational attainments be a means of adjustment to the social order. Their education will remain considerably deficient so long as this low order of teaching is tolerated. No higher responsibility rests upon the colleges and the universities today than to improve the teaching in considerable areas of their activities. It is gratifying to note a great interest in the discussions of this problem and that the will to improve is widely evident.

Let me conclude as I began by repeating that the public schools and the colleges and universities are the very fibre of American civilization. To such extent does our social order depend upon them that they must have unremitting and deeply sympathetic study and support. Let us hope that the best minds of America may chart their progress, and the ablest men and women may be their teachers!

Shifts in Moral Standards

E. H. Lindley[1]

A little while ago I was asked the difference between a Chancellor and a President. I replied that I was not sure, but I thought it was this: that a Chancellor took bigger chances. I am taking a big chance in attempting to tell you briefly about the moral situation. When you try to inspect that intangible, imponderable thing we know as "the moral life of our time," it is like looking into a roomful of smoke, so great is the confusion and indistinctness; and yet I know of no necessity greater than that we shall get our bearings in this day so full of challenge and peril to a new generation. Teachers, police, social workers, and occasional press dispatches from Chicago suggest that all is not well in this generation. The mounting curve of crime against property and against human life is undeniable. Many declare that we are witnessing a moral breakdown, but I venture to inquire whether this is a moral breakdown or, on the contrary, a closing of the plant to reorganize for the

[1] Chancellor, University of Kansas.

production of a better product. Is this disorganization of life which is all about us a sign of impending dissolution, or is it incident to reorganization on a new level with somewhat new objectives?

Everybody knows that the last decade has been one of unexampled change and chaos. Many charge all of the moral confusion to the Great War, to the release of restraint due to that tragic upheaval. The release of restraints we certainly witness here and there in youths who are said to be touched with consuming fire. But in Anita Loos's book—I do not know whether it is the one that refers to the blondes or to the brunettes—when the flapper gold-digger goes to Freud for examination, she is commanded by that great physician to "go home to get some inhibitions." Restraints! Some of them have certainly been removed; the brakes are not working all the time.

Another cause of change is due to the spirit of democratic ideas, the growing consciousness of the worthfulness and importance of each individual. Then, too, there is the incredible spread of knowledge. A little while ago when a questionnaire was sent to a great many students in a university, a somewhat cynical editor, in reply to an inquiry as to why such a questionnaire was withheld from other university students, remarked that it was unnecessary, that they already knew, that they already had the knowledge. Certainly, in our day, the young generation knows more about what formerly was forbidden knowledge than any generation since the world began.

Then, there is the ancient feud of youth and age. Youth is the time of action and experience; age is the time of reflection and regret. Every age has praised its mothers and criticised its daughters. In the twelfth century we have the record of those who, speaking of the new generation, said, "We cannot sing their songs or dance their dance; we cannot understand them, and they are on the way to perdition." In that marvelous letter of the Yale father to his son, you will remember that confession of this loving father, speaking starkly from his soul to his son, that he had discovered there was a screen or a curtain that separated the older from the younger, a curtain which became a wall that could never be climbed by those who had already passed through; that age never can enter completely into the life of youth, even with a heart full of affection.

William Allen White, speaking a little while ago to a convocation of students in his alma mater, said, "They tell me you are a tough generation, and you are, but so were your fathers and mothers. I knew them." These causes and perhaps others have been suggested as factors that have produced this swirling life in which our sons and our daughters swim—or sink. What a change! Because

of these things we are consciously seeing different, living different. Our generation shows the symptoms of shell-shock. When, during the War, brave men under the impact of overwhelming stimuli, suffered a shattering of their personal lives, a complete paralysis of their normal life took place. The unity of life was replaced by eccentricity and emotions; ancient instincts of the cave man rose like mutineers again and again to the captaincy of life. Similarly, our generation is bombarded by stimuli unheard of before—the automobile, the flying machine, the radio, and the movie. And the attempt to hold ourselves erect, to maintain some sort of reasonable unity or living order is a problem worthy of the strongest and stoutest hearts. We are in the midst of these Frankenstein monsters of our creation that threaten to destroy us.

There are croaking voices who declare that the race is due to succumb to moral overstrain. More hopeful voices announce that the release of restraints, the growth of knowledge, the growth of democratic ideas, and mutual understanding between age and youth have brought about a situation wherein dogma is yielding to life. The authority of dogma is yielding gradually to the authority of experience. And the outlook is not altogether dark.

Within thirty-five or forty years, scientific theory has led to the rediscovery of youth and adolescence. In an earlier time, the standards of conduct imposed on infancy and childhood were the standards of mature, aged persons. "Children are to be seen, not heard." The life of the family and of the community was determined by the standards of mature persons.

Then came these revelations of the unique character of childhood and of the absolute necessity that childhood shall live itself out and find full expression in terms of its own unique constitution in order to reach a maturity worth while. Stanley Hall used to say that a tadpole's tail is not to be cut off; the only way to get a tadpole out of the tadpole stage is to feed it and let it be the best tadpole that it can be; then the tail will disappear, and the frog will emerge. The recognition of adolescence, the understanding that it is a unique period of life demanding its own standards of conduct, has revolutionized the secondary schools of this country. That is to say, this generation has witnessed for the first time in human history the emancipation of childhood and youth from mature, aged standards. And the outburst of life which came as a result beggars description.

I remember a little while ago attending a meeting of young women from the university, perhaps one hundred women, all leaders. Eighteen of them talked, nobody more than three minutes. When

I went home, I said, "Well, they have arrived. We have wondered and speculated as to what this new freedom would bring to the women of this generation, and I have seen it in action tonight. Everyone physically fit, everyone speaking directly, thoughtfully, with power and insight; it was like a shower of bullets." And I said then what I have had no occasion to revise, that the young women of this generation, thanks to the larger freedom that they have enjoyed, are probably the best generation of women that have ever lived.

There are hopeful signs. Freedom always brings changes with it. The experimental attitude of youth toward life means progress. Their motto is "prove all things, but try anything once." They are gradually passing under the dominion and authority of experience. They have discovered, as we have discovered, partly with their help, that there is no way to become conscious of the moral order of the universe, if such there be, except through the act of living, and that nobody can fully discover for another. The clearer conception of the meaning of goodness and virtue is an achievement of our day. We know now that goodness, virtue, is not blind conformity to any code, however noble. Goodness is goodness for something. It is whatever results in fulfillment of personal life. Virtue is not written with a capital. It is plural. It is the sum of happy adjustments to the changing conditions that results in fulfillment of life for self and for others. The Sermon on the Mount in the minds of youth today is true, not because Jesus said it, but Jesus uttered it because His transcendent moral genius had found, in the great experiment of living, these things as eternal values of life.

And so the moral life is a voyage of discovery, of active and loving allegiance to all the essential life relations: that of the physical university family, to the community; of the vocation, to the wider world. And it is a continuous process of discovery and adjustment. Anything is good that is, on the whole, in the long run, productive of durable satisfaction.

The Puritan code under which this nation of ours began its life—and fortunately, I think—was a code adjusted to an agricultural society, simple, legalistic, rigorous, censorious. Nobody yields to me in admiration for the Puritan in his conquest of life, but one fatal defect of the Puritan code was its fear of the joy of living. Why, one of my Puritan ancestors refused to eat ice cream, not because he thought it would poison him, but because it would give him pleasure. That Puritan negation of the fundamental instinct for happiness and the insistence that other people be quite as good or better than themselves has bred in this richer day the revolt against

the narrow, censorious Puritan code. You remember the toast of Joseph Choate to the Puritan mother: "Here's to the Puritan Mothers, who endured all the hardships which the Puritan Fathers endured and, in addition, endured the Puritan Fathers."

Thanks to mass production, thanks to the harnessing of the discarnate force of Nature and the production of wealth undreamed of, we have discovered that we do not know how to play, that the art of consumption, of enjoyment of life in our race, at least in our country, is infantile as compared with our mastery of the art of production. And our youth insists that a moral code shall be found for them that will include the legitimate joys of living.

Stuart Chase sets down a table of the amount expended by Americans each year for recreation and pleasures—twenty billion dollars a year. When you read that list, you are not depressed so much by the magnitude of the expenditure but you do have some question as to the wisdom of the expenditure. If you wish a revelation of the backwardness of the art of consumption, read Chase's table, the percentage of expenditures in this country for enjoyment, and visualize our race groping and trying to find its way to the legitimate joys of life. And God speed! But what we need is an art of consumption, one that will protect us from unwise choices.

The other day in New York a brilliant young woman who sells advertising over the radio told me something of the enormous rewards in financial terms that come to those who take part in that advertising. I said: "That is all very fine, but I am concerned with the consumer. I would like to discover some way to put everybody in possession of sufficient sales resistance that he may be led not to buy less but to buy with more discrimination." And we have a long way to go, have we not?

This is a long story, and I am not going to tell it all. But here are our children, with opportunities beyond those of any previous generation, with freedom at first glimpse almost uncharted, finding their way, according to a survey of student life in the last few years, to discipline, trying to discover some way in which they can express fullness and joy of life and yet do a day's work, honestly, and on the level of their best possibilities. Not all may agree with me, and I may be too sanguine. I confess my hair rises sometimes in the presence of the candor of some men and women of this new generation. Yet I believe that they are as morally fastidious as their mothers and fathers ever were.

The current of our times is like the tide of St. Michel, that rocky isle where the current is so swift that it can overtake the swiftest

horse. Many of our children, living in such a current, will drown, but those who learn to swim will have power of soul greater perhaps than that of preceding generations.

I sat a little while ago in a city at a table where the leaders of that city were present, and one of these men, a descendant of one of the great Puritan families which came over in the Mayflower, a man who had kept the noble traditions of this family and had given all of himself to his day and generation, said, "I wonder if there is as much moral strength today as there was then?" The comment was conflicting, and finally one man said, "My judgment is that any man who came over in the Mayflower, if suddenly placed in the moral situation today without adequate preparation, would crumple up like paper." Some people are crumpling up like paper today. This is no reflection on their moral gift, but it emphasizes the fact that the act of living develops power to live victoriously.

A little while ago a young man in an eastern city spent an evening with me at a hotel. He said, "I am greatly troubled. All the old standards which I knew in my childhood and youth seem futile and wrong. I haven't any chart." But I thought maybe he had. I put one question after another, and he repudiated every standard that could have been called traditional. Finally he said, "I don't think there is any moral order in the universe."

"Well," I said, "you are not facing very much of it, but, judging by the day's work that you seem to be able to do, you are doing a good, honest day's work, up to the level of your best order. How do you account for it?" He said, "I don't know, but all the old standards are no good."

The next morning at breakfast I said, "I wonder if there is not a standard of work with you, a motivation, you have high talents. Do you feel any responsibility for that talent?"

His face grew very serious as he said, "Yes, I am a trustee of that talent."

So I said, "Do you need any higher standard than that? You are a trustee of your talent. You have self-respect. You will not tolerate the second best?"

"No, I think I have to give my best."

I said, "You don't need to worry about traditional standards; you have got something that will lead you straight to the Sermon on the Mount. And don't worry about getting there today, or tomorrow, but you will eventually arrive."

In a middle-western university a very wise Dean one day called into his office a Senior and said, "I know you and I know your father

and your mother, and I just wanted to tell you before it is too late that I am sorry that you are failing."

"Why," said the boy, "I haven't made a failure since I have been here."

"Oh," said the Dean, "I know you have passed in everything, but you are a failure just the same, or at least you are failing."

"How do you figure that?"

"I know your father and your mother, both are gifted. All the tests made of you when you came here rank you among the first ten percent in ability. I have examined your record, and I have looked up your extra-curricular activities, and you have not led in anything."

"Well," replied the Senior, "why should I worry and burn the midnight oil? I am going back into my father's business. A man doesn't have to be a Phi Beta Kappa to sell furniture." Thus he walked into the trap cleverly set by the shrewd Dean.

The Dean said, "Did you ever stop to think how your father won leadership in his community in his line of business? He was an A-man and he ran on an A-schedule. Now you propose as an A-man to go in on a C-schedule and take advantage of the victory of his years. You will get married, and one of these days a competitor who is an A-man on an A-schedule will come into your town, and there is going to be some trouble for you and your family. Don't you see that it doesn't mean only a little unhappiness for you but that it determines the level of life of all who are dearest to you? Go away and think about this and you may discover that you are not dealing fairly with your father or your mother or this university." And the boy went away in a serious mood.

This generation has, I think, its measure of sense of responsibility. There are, of course, plenty of foolish boys and silly girls, as always, but as you see young people in their sports and at work, you find evidences of supreme effort, of tremendous earnestness, and of growing concern for the intellectual life at its best. When I tell you that last year 38 percent of the Seniors of Harvard University were honor men, you will realize that that is beyond any record known in this country, a record of the fact that the victories of men honor the habit of success and mastery. The men's records in the college are prophetic of their future. The studies of the Bell Telephone Company show it without question.

Thomas Carlyle complained that the hell of fire and brimstone was disappearing from English hearts; it was being replaced by a new hell, the fear of not making money. But I think the youth

of this generation are facing another hell, which they dread as our ancestors dreaded that of fire and brimstone, namely, the hell of not making good.

We have a lot to learn from our children as we see them in this great adventure, making experiments, some of them deadly in their possibilities. It is for us, as always, to issue warning, but to remember as well that the car of life, even of our children, is not driven by the brakes, nor from the back seat, but by the one who really owns the car. So, in contemplating the shift in moral standards, we may well recall the admonition of that great teacher and seer, Professor William James: "Don't be afraid of life."

Education and International Understanding

W. J. Shephard[1]

For a generation and particularly since the Great War, the problem of world peace has commanded the interest and attention of all thoughtful men. Is it possible to achieve some other and more rational method of adjusting international differences than war? From various angles and divergent viewpoints this question has been studied with an intensity which probably no other social problem has commanded during the last generation. Various proposals have been offered. Various institutions have been created. The League of Nations now functions more or less satisfactorily, according to the viewpoint of the observer. The World Court sits in the adjudication of international disputes and is building up a jurisprudence which its over-sanguine supporters believe will constitute eventually a body of law which will serve to reconcile even the most vital and fundamental conflicts between the nations of the world. Other international agencies have multiplied and constitute, to some extent at least, a network of international control. But the problem still remains as to whether these instruments can be made effective when great nations, and particularly groups of nations, face each other across the chasm of fundamental economic, social, and cultural differences which a changing order brings to the forefront of international politics.

THE PROBLEM OF WORLD PEACE

Such differences, aggravated by nationalistic passion and prejudice, have hitherto found no solution save by the ruthless arbitrament of war. Is it within the competence of human reason and human

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statesmanship to substitute other instruments of control for the methods of physical force and violence which, from the earliest beginnings of human society, have always constituted the last resort in the quarrels between nations? Is a permanent basis of international understanding merely the fantastic dream of fanatical doctrinaires, or may we accept it as a practical goal toward which we may look with confidence and for which we may work with real enthusiasm? Let us make no mistake as to the supreme importance of this problem. We have reached the parting of the ways; no middle course is possible. Humanity must accept, and that speedily, the rule of Mars or of Minerva. Unless we can within the next half century really solve the problem of war, we must expect the eclipse of our present civilization, the return to the Dark Ages. The gloomy prognosis of Oswald Spengler is based upon an analysis of existing conditions that cannot be ignored. If this prediction of an impending *Götterdämmerung* is in any wise faulty, it is only in his possible failure to give due weight to the power of productive and constructive thought. The current of social and economic forces runs definitely in the direction of a collapse of the splendid structure of modern civilization. But it is not with the voice of Cassandra that I would speak to you this evening. Rather would I present, if possible, an analysis of the existing world situation upon the basis of which we may, with full confidence, attack the problems of world peace.

THE NATURE OF MODERN WARS

Our task of analysis will, I believe, be considerably simplified if we recognize, at the outset, that the causes of international misunderstanding and of war today are very different from those of even a century or less ago. Wars were then occasioned largely by conflicting dynastic ambitions, or by the greed of princes for larger domains from which to wring increased revenues from subject populations. The wars of the later eighteenth and early nineteenth centuries started, it is true, as contests between revolutionary democracy and reactionary and obtuse governments, organized in the interest of monarchical absolutism; but the lofty plane upon which revolutionary France threw down the gauntlet to the encircling monarchies of Europe could not be maintained, and the story of Napoleon illustrates the subservience of a popular and democratic cause to the personal ambition of a great war lord. The nationalism which the French Revolution introduced and which for a few years inspired the people of France as no previous impulse had ever affected a great people was responsible for tremendous advances on the road

of progress as well as for the cruelties, the hatreds, and the bloodshed of the Reign of Terror. But the significant fact is that this new spirit of nationalism was captured by the "Little Corporal" and utilized in the interest of his own vanity and ambition.

The wars of today present a sharp contrast to those of earlier times in that their basic cause is primarily economic, though to some extent social and cultural, differences of interest. These basic economic conflicts are, however, presented in the guise of nationalistic conflicts and are thus endowed with an emotional bitterness which was absent in the wars of an earlier day. The wars of recent times have not been dynastic nor waged primarily for the purpose of territorial conquest. They have been wars between peoples rather than between kings, wars in which have been enlisted all the elements of mass hatred and mass hysteria, and they have been fundamentally concerned with economic advantages sought by one group of industrial and commercial interests as against other groups of the same sort. This generalization does not entirely explain every war. Doubtless other factors enter in; but in general I think it may truthfully be said that modern wars are the resultant of conflicts of economic and social forces accentuated by nationalistic animosities and hatreds.

In most of the proposals for abolishing war there are implicit certain fundamental misunderstandings regarding the nature of this institution. Many extreme pacifists view war as an entirely unnecessary and utterly indefensible evil. Their proposals are likely to take the form of some general outlawry of war. All that appears necessary is simply for the nations of the world to decide that war shall be no more. This naïve conception of war quite ignores the fact that, evil as are its consequences, war does nevertheless perform a function in the adjustment of international relationships. We may agree that it usually performs this function badly, that adjustments, effected by *force majeure* are not rational adjustments, but we shall be quite wrong and indeed dangerously wrong if we fail to appreciate the functional character of war in settling international disputes. The danger of such a simple and naïve approach lies in the failure to recognize the necessity of substituting some other instrument in the place of war. If there is an essential function of adjustment in the field of international affairs, that function must be performed by war or by some substitute for war. To merely attempt to outlaw war without establishing an adequate system of institutions by which international differences may be settled is to place reliance on pious pronouncements and completely to neglect the pulsating facts of

life. Such procedures and such reliance are always dangerous. But this is not the only misunderstanding regarding the nature of war.

Those who recognize the true functional character of war, and the necessity of substituting for it other instruments of control by which international differences may be adjusted, usually fail to distinguish what actually is the function of war. Its function is usually viewed as analagous to that of a court of law, and various schemes of arbitration, various systems of judicial tribunals have been created as substitutes for war. I do not wish to minimize the significance or importance of these arbitration and judicial tribunals, but their restricted capacity and competence ought to be clearly understood. The war between the States was not averted by the Supreme Court, though it attempted this very thing in the Dred Scott decision. And it is noteworthy that the effect of that decision was not to enhance the prestige of the Court which handed it down.

The differences and disputes between nations are of two sharply distinguished sorts: justiciable and non-justiciable or political. Justiciable disputes are by their nature capable of settlement by a court of law. The function of a court is to determine the facts in the case and to apply the recognized law to these facts. Only in small degree and by a very gradual process are courts able to modify the law. They are not law-making bodies. A very large proportion of international misunderstandings are justiciable. We have a large body of recognized international law, some of it embodied in international treaties and statutes, some the product of custom and usage often embodied in the decisions of courts, national and international. For the adjudication of such disputes, international courts of justice are entirely competent, and their work in this field is of great significance. Where international law has developed clear rules of conduct and the only necessity is to apply these rules to the facts, wars are not resorted to. At least they are clearly unjustifiable on any moral or political ground. The law relating to boundary disputes, for example, is so clearly defined that no nation is justified in waging war in connection with such a question. The occasion, as distinguished from the cause, of the Great War was just such a justiciable matter—the murder of the Archduke Frank Ferdinand. This was nothing but an ordinary murder case involving the question whether the government of Serbia was *particeps criminis*. It was exactly the sort of question which an impartial judicial tribunal would have been able easily to adjudicate on the basis of established and recognized law. But no one believes that the petty affair at Sarajevo was the real cause of the war.

Wars nowadays, and especially the great ones, are not waged for the purpose of determining what are the legal rights of nations. They are rather undertaken for the purpose of destroying old and, to at least one of the parties, unsatisfactory laws and of substituting new laws in its stead. However destructive of the lives and property of men, wars are constructive in the field of law. They are essentially legislative in their nature. The issue in the Great War may be said to have been substantially whether England should continue to dominate the sea or whether Germany should procure what she considered to be the "place in the sun" to which she was entitled by right of her expanding population and increasing economic strength. Such an issue is not legal but political and cannot be settled by learned jurists sitting around a table. Being non-justiciable and political, it must be settled by a procedure analagous to legislation.

It is the province of legislation to supersede old law by new law in accordance with the changing economic and social conditions of the community. In an economically and socially dynamic world constant changes in the legal status are inevitable. It becomes necessary to legislate decrepit and moribund Spain out of Cuba and to legislate the United States into Porto Rico. Who shall control the economic development of Manchuria—Russia or Japan? These are not questions to be determined by the application of rules of law, but rather by the creation of new law and new legal rights. The legal right to Manchuria in 1904 was clearly vested in neither Russia nor Japan, but in China, and any court strictly applying the *lex loci* would have declared both of the parties in controversy trespassers. But strong and growing nations are never going to permit the dead hand of antiquated law to rule them despite the opposing forces of an altered economic and social order.

A substitute for war can be found only in some kind of legislative process by which political changes can be effected which a changing economic and social order makes necessary. But such a legislative process, to be accepted and obeyed must really reflect the public opinion of the world community. The question is: Can a world representative asembly be so constituted as to command the confidence and reflect the opinion of a world community?

IMPLICATIONS OF INDUSTRIALISM

The problem of international understanding, as we have thus envisaged it, is largely the problem of effecting political adjustments by some other instrument than war. These political adjustments are necessitated by a rapidly changing economic and social order. These

economic and social changes not only affect international relationships but actually constitute the essential material of national and local politics. Are the instruments of control within the state so satisfactory that we may find in them the analogues for a system of control in the broader field of international affairs? This question compels us to analyze the problem of social control from the national as well as from the international point of view.

In attacking any great social problem, we may often find a point of departure in some simple generality which has received universal acceptance but whose implications have not been fully realized. This perhaps is true of the problem of social control in national and international relationships. We are living in a new world, a world based upon the developments of modern science, a world whose character is fundamentally determined by the marvellous discoveries and inventions, a description of which would have been received by our ancestors of a century and a half ago as a fairy story which could only be the product of a most fantastic imagination, unreal and devoid of any substantial basis in the existing order of that time. This, I think we will agree, is a generality, a commonplace, which has become hackneyed by constant repetition. These are facts with which even the man on the street is completely familiar.

Yet the implications of this marvellous transformation of what we have come to call the Industrial Revolution are only beginning to be apprehended. We have, of course, long realized the potency of the eighteenth-century discoveries and inventions by which steam was harnessed to the uses of man and of the more recent applications of science in the fields of electricity and the internal combustion engine. The man on the street talks glibly enough about the automobile, the radio, the movies, and the aeroplane as significant features of modern civilization, but what this new industrialism, these bewildering changes, based as they are upon the technical advances of the last century, mean in social transformation has been given little thought.

We have advanced certainly by leaps and bounds in the field of industrial technique and industrial organization. The incidence of this industrial change is readily seen in the urbanization of society, the routinization of labor, the tremendous development of capital, the highly complex organization of banking, the widely expanded system of commercial operations, the transformation of family life, the greatly increased mobility of the individual, the higher standards of living generally prevalent, the development of almost instantaneous means of communication, and the completely transformed scheme of

values by which the individual and society generally appraise the worth of all the various elements which constitute for the man of today the basis of the "good life." But we have not appreciated sufficiently that this new industrial order increasingly demands a novel and radically different system of social control. We are attempting to operate and control a twentieth century industrial order with an eighteenth century scheme of social control. This is what is meant by the phrase "the legal lag," and until we have solved the problem of adjustment, not only will the friction and conflict between the various elements within the limits of any nation remain, but the larger problem of international relationships will continue to present the constant menace of war.

Particular instances of the failure of adjustment within the state come to mind immediately. President Hoover's recent inaugural address emphasized the complete breakdown of one important division of government—the administration of justice. It is not merely the prohibition question which is incapable of solution under the existing administrative organization; the whole functioning of the courts is recognized by honest judges and thoughtful students generally as antiquated and ill adapted to the pressure of the present day conditions. The importance of this problem has led the President to announce the appointment of a strong commission to study the entire question and seek a basis for possible significant legislation. For at least a generation, students of taxation have been laboring with the problem of an equitable and just system by which the necessary revenues of state and nation may be obtained, and, in spite of the accumulation of vast amounts of data and the intensive study of this problem by administrative officials, legislative bodies, bureaus of research and independent investigators, we seem to have made little progress toward the solution. The relations of capital and labor are still fraught with as much friction and hostility as they were a generation ago, and the increasing frequency of acute conflicts such as have characterized the coal industry for the last twenty years are evidence of our inability to reach any satisfactory solution of this vexing problem. The problem of farm relief has been the bane of our national politics throughout the last administration. It has been inherited by the present administration as an unsolved problem. Have we any assurance that a satisfactory solution will be forthcoming?

Among other adjuncts of government we have created an Interstate Commerce Commission, a Federal Trade Commission, a Tariff Commission, a Shipping Board, and a Radio Commission. There is

no disparagement of the men who have been appointed to these various bodies and who are, on the whole, honestly and ably performing the functions of their offices in saying that they have not solved the numerous problems which our highly complex industrial order has thrown up in the fields of interstate commerce, capitalistic combinations, foreign trade, and communication through the ether.

Can we view the present state of our party system with any degree of confidence or enthusiasm? Political parties obviously today offer no clear basis of division upon the significant economic or social problems of the nation and, in state and local politics, they are utterly meaningless except as organizations for acquiring power, with little or no reference to the manner in which that power is to be used. These are but instances of the general failure of our political and governmental agencies adequately to meet the increasingly heavy burden of controlling and directing the economic and social life of the nation. May it not be suggested that we need a new orientation, a new point of departure, an inspired and constructive type of statesmanship which thus far has been lacking?

I am not suggesting that we abandon the time-honored institutions of our cherished democracy without the most careful and serious investigation. Our first steps must be tentative and experimental. I am not preaching revolution. But I am insisting that it is the duty of intelligent citizens to analyze existing political institutions in the light of the changed conditions of a new world of marvelous industrial, economic, and social complexity and to frankly and fearlessly face the task of reshaping political and governmental institutions to meet the requirements of the new world order. We must not be frightened from our task by cries of "radical" or "bolshevist."

AN ECONOMIC AND FUNCTIONAL APPROACH

To understand the basis upon which any permanent system of adjusting international differences may be possible or any method by which permanent international understanding may be substituted for international conflict, we must examine the various instruments of social control which operate both in the field of domestic relationships and in the broader area of international affairs. We are seeking an alternative to the continuous conflict which issues in frequent instances in force and violence between labor and capital within the state and we are also seeking an alternative to war as a means of settling disputes between nations. No mere gesture such as the appointment of a commission on the coal industry or the enactment of the Kellogg Peace Pact or an international agreement to outlaw

war will suffice. Such gestures may have their significance. They often indicate the trend of public opinion but they do not constitute solutions of the primary questions at issue. There must be constructive statesmanship, not merely plausible pronouncements, and that statesmanship must be based upon a realistic conception of the actual factors operative in the situation.

In both the fields of domestic and international public affairs the determining factors are economic, and it is only by the full appreciation of the importance of these economic factors that an approach can be made to a scheme of arrangements and devices by which opposing interests may be conciliated and satisfactory adjustments achieved. The impossibility of settling the increasingly aggravated differences of economic interests within the state by the existing methods of piling statute upon statute, of adding administrative agency to administrative agency, ought soon to become obvious. The recognition of economic interests as constituent elements in a scheme of political and social control is the only basis upon which we may hope to solve the problems of our modern industrial order.

Society is no longer organized on the basis of geographical and self-contained areas. The simple, homogeneous community of the eighteenth century is a thing of the past. We have evolved from a stage of agricultural homogeneity to that of industrial heterogeneity. Lines of economic and social organization cut across every kind of geographical division. The problems which confront us today are related to groupings which have no connection with geography. The commercial and banking systems pay no attention to state, county, or municipal lines. Interstate commerce has completely superseded the locally limited commerce of our ancestors. The significant relations among individuals run along functional rather than geographical lines. It is not my neighbor but my fellow shareholder, my customer, my client, with whom I now have the most intimate connections, and these may happen to reside a thousand miles distant from my place of residence.

There has developed a vast organization of labor unions, of manufacturers' associations, of commercial agencies, of professional and educational groups, which constitute the very fabric of modern society. It is in these that the individual finds his major interest. It is here that the pulsating problems of modern life are focused. The efflorescence of a wide variety of groups bound together by economic and social interests constitutes the outstanding feature of modern civilization. If government is to adjust itself to these modern conditions, it must be fundamentally reorganized along functional

and group lines. We must abandon to a large extent the basis upon which our political system has hitherto rested, the basis of geographical divisions and geographical constituencies. We must attempt to parallel the social and economic organization of our nation by a political system based on functional groups as the essential element.

The details of a system of functional democracy remain to be worked out. They will not come to us by any Sinaitic revelation. Only by processes of persistent and constructive statesmanship, emancipated from the trammels of a conventional and stereotyped attitude and illuminated by the free play of imagination, may we expect to gradually perceive the outlines of the new order. A constitutional system in which the will of the people is expressed, not entirely through elections at local polling places but largely embodied in the deliberate consensus of functional groups, based upon economic and social interest, may still embody the principle of democracy, a democracy organically related to the social structure and capable of attacking with intelligence and enthusiasm the problems presented by the new age. We have indeed achieved a new social and economic order; we must boldly undertake the creation of a new political order. No longer is it sufficient to follow the beaten paths of political experience. We must blaze new trails through the forest, fraught though the task may be with difficulties and dangers at every step.

In the same way we must speedily achieve a new viewpoint with regard to international differences based upon a full appreciation of the economic factors and the disturbing element of nationalism if we are to prevent a succession of wars, each more terrible and destructive than the last. This disturbing element of nationalism corresponds to the sectional and geographical factor in state and national politics. Each is a heritage of a period antedating the Industrial Revolution. Each persists in its psychological appeal in spite of the increasing economic and social integration which the Industrial Revolution has affected. The obvious obstacle to a rational system of national and state government based upon adequate representation of economic and social forces lies in the rationally invalid psychology of sectionalism, of geographical area, of local community. And the obvious obstacle to a rational organization of the world in which war may be superseded by other and more rational systems of social control lies in the psychology of nationalism—a psychology which flames into impassioned and unreasoned hatreds when circumstances and events permit the application of the pressure of propaganda.

But if these dispersive factors, whose *raison d'etre* obviously no longer exists, still balk our attempts at dealng with such realities by

realistic methods, we must recognize that each day sees economic and social integration, not only of the nation, but of the world, carried one step farther. Civilization no longer rests upon the narrow basis of the achievements of a particular city such as that of Renaissance Florence or Venice, nor upon the broader but still too narrow achievements of a single nation like that of seventeenth century France. Civilization may not as yet claim to be universal. There are cultures found in China, in India, in Central Africa which are fundamentally different from, and conflicting with, that of the West. But the civilization of Europe, of the Americas, of Australia and Japan is a common civilization—a civilization based upon a common application of modern science to the uses of man and which expresses itself in a highly complex economic and social organization and in the emergence of a wide variety of social and economic problems. There are differences, to be sure, partly the heritage of an earlier epoch, partly the product of varying geographic and climatic factors. We should not wish to destroy these special cultures so long as they do not constitute the basis of dangerous nationalistic sentiments and attitudes which engender war. A dead uniformity in which peace might prevail but only at the price of stagnation is not our goal. A variegated world is an interesting world. Professor Alfred Zimmern has said that "politics should be denationalized and culture nationalized." But these differences in culture are becoming merely the decorations, the appurtenances of modern civilization. In fundamental and basic aspects, modern civilizations increasingly display the character of their common origin in the Industrial Revolution. An integrated world must be the inevitable product of the dominating forces at work today unless our failure to develop the necessary instruments of social control should throw us back into chaos and barbarism before the work is completed.

INSTRUMENTS OF SOCIAL CONTROL

If the logic of this analysis appears sound, the problem is considerably clarified. On the one hand, we must definitely attempt to break down the psychology of localism and geographical attachment within the state or nation and the psychology of nationalism in the relationships of nations one with the other; and, on the other hand, we must seek to bring to clear realization in the minds of men the significance of economic and social interests which transcend the artificial boundary lines which now determine so largely the play of politics. Can we envisage a new order in which legitimate economic and social interests which find themselves in conflict will be adjusted

on the basis of a generally accepted principle of social utility, unembarrassed by the psychology of meaningless sectionalism, localism, or nationalism? And if this goal appears in any wise feasible, what are the instruments which we must employ in achieving the new social order, both in the nation and in the world at large?

The forms of social control are myriad, ranging from the great fleets of battleships to the conventions of the modern world of fashion or the taboos of primitive communities. They may all, however, be grouped in four general categories: force, law, religion, and education. To these some would add a fifth, custom, but to me custom is merely an expression of force, law, religion, or education. There are legal customs, religious customs, and customs springing from education. The custom so widely prevalent today of reading the morning newspaper before beginning the day's work is rooted in education and is an element in the effective power of the press, which we all recognize as one of the most significant social controls of modern civilization. It is apparent that I am giving the term, education, a broad and unrestricted meaning. In specific instances, there may be such a commingling of these various types of control that it is impossible exactly or accurately to place them. But through these four instruments human relationships are determined, and the rights and obligations of individual and group definitely established.

It is to the elimination, so far as possible, of force as an instrument of control that our argument has thus far been directed. Force must continue to be, in international as in domestic affairs, the *ultima ratio* when non-violent methods are ineffective. A regime of world peace does not mean that an international police force may not be necessary. It does mean that force is at all times subordinated to law. War is the repudiation of legal and peaceful instrumentalities for the adjustment of national differences and an appeal to force as above and unrestricted by law, except as the laws of war come in, like the rules of the prize ring, to somewhat ameliorate the brutalities and horrors of the use of violence. How far such so-called laws of war are successful in this purpose is a question to which the memories of the last great conflict afford a convincing answer. It is utterly futile to seek a solution to the problem of war by international treaties which attempt to bind nations not to use poison gas, not to attack undefended cities from the air, not to sink enemy merchantmen. In the *opera bouffe* hostilities of two minor powers, conducted under the strict surveillance of the great nations, such restraints may perhaps and perforce be observed, but when the great powers themselves are engaged, these "rules of the ring" are completely thrown aside. No, my

friends, it is to the abolition of war, not to its amelioration, that we must direct our energies, and this can only be accomplished by the substitution of other means of social control than force.

Religion has throughout human history constituted a powerful instrument of social control. It operates today as a potent agency in directing and shaping the conduct of individuals. Its great value in the progressive advancement of civilization can scarcely be denied. But to what extent may we rely either upon religion as a vital factor in the lives of men, or as embodied in great ecclesiastical organizations, to supply the means of control through which adjustments of the relationships between individuals, groups, and nations may be satisfactorily effected? However much importance we may attribute to the religious spirit as it pervades and influences humanity, it is evident that this has never in the past solved, and does not promise at the present to solve, the problem of social and economic conflicts within the state or of nationalistic conflicts between great nations. The church in its various forms has indeed from time to time played an important rôle in the determination of political events, but since the Industrial Revolution that rôle has been of diminishing significance. Certainly one cannot see any significant contribution which the church has made in the solution of any of the pressing problems of current politics in America save that of prohibition, and the recent history of prohibition is not particularly encouraging. It is true that the church has from time to time announced lofty principles with regard to human brotherhood and the evil character of war, but no constructive program has emanated from ecclesiastical bodies, and no effective step has been taken by the church to prevent any great wars of modern time. It is not minimizing the importance of religion as an instrument of social control if we recognize that we must look elsewhere at the present moment for the means of social readjustment and international understanding.

Only through the joint use of law and education may the goal which we have placed before ourselves be in any measure achieved. To substitute a regime of law for a regime of war is the aim of all advanced thinkers in the field of international affairs. But we would go further here and suggest that to achieve a régime of law for the entire world, sufficiently broad and sufficiently representative of and responsive to the vital economic and social interests of the world, requires institutions of government fundamentally different from those which now obtain even in the most advanced democracies. There must be correlated between the agencies of law making and the underlying interests of modern society.

Perhaps we can see in such institutions as the International Labor Office, the great cartels by which important branches of industry in Europe are being internationalized, the international federation of learned societies and professional associations, and the numerous international organizations concerned with human betterment, of which the association for the suppression of the white slave traffic is a notable instance, as well as in the large number of international administrative agencies of which the World Postal Union is one example, the material out of which may evolve "the parliament of man, the federation of the world." Thus, too, we may perhaps see in the recent and rapid development within our own country of such organizations as the United States Chamber of Commerce, the American Manufacturers' Association, the American Federation of Labor, the Farm Bureau, and the Anti-Saloon League, which through their lobbies are already exercising decisive control over legislation, the material for a new type of functional legislature, which in its beginnings might go no farther than an advisory and consultative body.

One thing appears to be certain, we cannot rely upon any international legislature representing the widely diverse nationalities of the world today with their highly emotional nationalistic patriotisms, their conflicting cultures, and antagonistic prejudices. The result of an experiment with such a representative body can easily be forecast by the experience of the Reichsrath of the old Empire of Austria, where the nationalistic prejudices and hatreds of German, Czech, Pole, Croatian, Ruthenian, Slovakian, and a number of other nationalities completely nullified the purpose for which the body was created. Behind any representative body there must be a basic public opinion, else their deliberations come to naught and such laws as they may enact are dead letters in large sections of the area over which they are presumed to rule.

The present social, economic, and cultural differences among the nations of the world, accentuated by the virulence of nationalistic psychologies, offer no hope in any period which we may take into account for a successful application of the orthodox principles and methods of representation to a world legislature. But a body frankly composed of the most significant and important economic interests as they have developed or are developing on a world scale might serve an immediate purpose in alleviating strained international situations and might eventually develop into the instrument we are seeking as an alternative for war. Its procedure would not be that of majority rule, but that of consensus. Freed from the entanglements of nationalism, it would be in a position to approach such problems as

those of control of raw materials, tariff barriers, racial discriminations, immigration and emigration, with an open mind and an international, indeed, a world point of view.

THE PLACE OF EDUCATION

If it is apparent that international understanding can rest only upon a legal structure built in correlation with, and resting upon, the actual economic and social interests which transcend the bounds of nationality, what are the means by which such an organization of agencies and system of laws may be achieved and maintained? We are not dealing with dictatorships but with democracies. No new political world order can be ushered in by the fiat of a Mussolini. Only through the relatively slow processes of education can we hope to bring a better world into existence.

But let us be clear as to the function of education in this regard. That function does not lie in inculcating particular notions or ideas in the minds of our youth; propaganda, whether it be for preparedness or pacifism, is not a function which our schools should undertake. As teachers, we must keep the tools of our vocation clean and free from every septic influence. This does not mean that every point of view, every significant body of data on the problem of world peace, as on every other important social and political problem, should not be fully examined. It does not mean that the teacher should not frankly express his own opinion. But it does mean that our schools should not be used or misused in the propaganda of any doctrine.

The function of education is primarily and fundamentally one of emancipating the human spirit. It is a function of developing the latent intellectual capacities of child and youth. An educated man is not merely one who has graduated from college. He is a man who, by whatever method his education has been pursued, has acquired certain definite proficiencies, certain capacities which not only broaden his horizon but enhance his usefulness to society. An educated man is an open-minded man, a man freed from bias, the prejudice, the intolerance that characterize the mass of mankind; an educated man is a critically skeptical man, not credulous or gullible; an educated man is one who recognizes a problem when he sees it, who is able to analyze it into its various elements and is not afraid to follow its ramifications wherever they may lead; an educated man is one who is capable of taking a broad and synthetic view of an entire situation, who does not fail to see the forest for the trees; an educated man is one who appreciates the scientific basis of our present civilization and who is aware of the vast complexity of contemporary

social and economic phenomena and the problems arising therefrom. An educated man is one who has acquired the art of intelligible communication both by the spoken and the written word; and finally, an educated man is one who has created for himself a philosophy of life, an outlook on the world, a scheme of values, by which to judge the utility or futility, the rightfulness or wrongfulness, the goodness or badness of the various aspects of the passing show of life.

The hope of an ordered world, in which peace shall reign, in which rights and obligations shall be respected, in which local, provincial, and national prejudices shall give way to world-wide sympathy and co-operation, in which understanding shall replace misunderstanding, lies in the possibility of education rising to its lofty opportunity and creating that leaven of really educated men which will leaven the whole lump. We must not pursue a policy of drift but one of mastery. Not victims of blind forces, but captains of our destiny, we must use to the utmost the powers of intelligence which God has given us. Only thus can the Juggernaut of war be banished from our midst. Treaties and pacts, World Courts and Leagues of Nations, councils based upon economic interests, indeed, have their place, but transcending all and without which these are but sounding brass and tinkling cymbals, is the emancipated spirit of mankind, the invincible power of an intelligent world public opinion. It is to education that we must look for the creation of the international mind. It is only when, through the effective work of education that a sufficient number of educated men believe that "above all nations is humanity," that the problem of international understanding will have achieved its real solution.

The Place of the Teacher in the American Democracy

Rabbi Stephen S. Wise[1]

I presume it is the practice of those who arrange for functions on the campus of Ohio State University to have the wise and true, the solemn and unanswerable things said first, then to have the lighter, less significant, less worth-while things said by some visitor from New York. I accepted your invitation, but I confess to you that I am doubly fearful about speaking at this moment. There are two types of audiences of which I am afraid. One is an audience of college students and professors, particularly the students, and next an audience of teachers. Teachers and students are omniscient and

[1] New York City.

impeccable, and when I face a combination of university teachers and students and the teachers of the public schools of Ohio, I am indeed reduced to a penitent state, more particularly because I happen to be—as some of you may have heard—of foreign birth, that is, an adoptive citizen of America.

Had I lived in Ohio or Indiana all the years of my residence in America, I might have acquired a command of the difficulties of the English tongue, but I have lived in New York all my life, a fact which puts one at a great disadvantage when compared with those who utter the musical cadences which flow from the lips of Ohioans and Indianians, and, what is more, it is very difficult for a foreign-born person really to come to know the intricacies, the exquisite niceties of our infinitely difficult English grammar. I have a young daughter, and her last word to me whenever I go to address teachers or college students is, "Now, remember, father, you are foreign-born. You have yet to learn the English language. I warn you of one thing—don't use prepositions to close sentences with."

I take it for granted that I am speaking in the main to teachers. I dare say that a dozen students, in weariness of spirit after the dedication this day of ten or fifteen hours to their studies, are idling away one hour in listening to a Jewish parson from New York. But in any event, I am honored to think that I am to speak to a group of Ohio teachers upon the task of the teacher in the American democracy.

I am not a teacher. I am a preacher in the pulpit and also I happen to be the president of an institute for the training of men for the ministry, but I am not a teacher in your sense. I am not really a teacher because I am not as underpaid as you are. But I think I know enough about the teacher to know something about what ought to be, what must needs become, the task of the teacher in the American democracy. And before I speak of that task, I am minded to say to you in all seriousness that I think I take the task of the teacher a little more seriously than some of you do. I am not minded as are they who feel that all problems of American life which the church and the home fail to solve are to be dumped upon the American school. I believe that the home and the church are underworked and that the school is overworked in these days. There are many problems delegated to the school and college which will never be solved within the classroom, and in any event there must be courage and understanding and dignity within the walls of the home and church as well as within the halls of the school.

At the same time, even though the school is not expected to offer solutions to all questions, none the less I feel that the teacher

has a great task in the American democracy. I feel deeply that the teacher ought to think of himself, not as an instructional expert but as a real contributor to the working out of the problems of our democracy.

There is the presupposition on my part that there are problems to be solved in America besides prohibition that, even though our nation is one hundred and fifty-three years old, still we have made no more than a beginning in the matter of facing the fundamental problems of a democracy, the industrial and social as well as the political problems. I cannot help feeling that last October was deeply revealing in that it showed that we are still at a primary stage of understanding of what the fundamental implications of democracy are.

In any event, I am trying to make clear to you that the task of the teacher in a democracy is a most important task and that the teacher cannot perform his task in the democracy with any degree of adequacy unless he be a free agent, unless he be uninhibited intellectually and spiritually and maintains his freedom. Because you in the city of Columbus accept $112 or $136 or $175 per month as a teacher, you need not place your mind and your conscience and your freedom in the keeping of the board of trustees or the managers of your city. In a word, the teacher of our republic must remain a free and unhampered being, if he or she is to be a teacher in any real sense. I do not mean that every week or every day or every month teachers are to start a revolt against school committees, but I do mean that you ought to keep your minds as your own, that you ought to retain freedom of conscience, and, more than that, whatever be the minds of the school boards and school directors, you ought to retain the office of intellectual creativeness. You are the upbuilders of the lives of children of the democracy.

You are not placed in schools in order to teach children the elements of arithmetic and history and grammar; you place yourselves in the schools of America in order to become the builders of the lives of the American people of today and tomorrow and tomorrow's tomorrow, for all eternity. If you ever have the misfortune to come into a school district in which there is no appreciation of the fundamental, intellectual, social, and spiritual responsibility of the teacher, get out. Leave that job as you would a thing that is pestilential. If you can't get respect for yourselves as a free agent, as a creative builder of the lives of the democracy, get out of teaching and leave teaching to them that would be slaves; insist upon being free men and women.

I confess that I am covetous. I am covetous for the intellectual and spiritual prerogatives of the teacher. I want the teacher to be thought of with some part of the respect which goes out to men in politics, whether they deserve it or not. I want the teacher to be looked upon not as a sort of hireling in the interest of literacy but as a real participator in the life of the city and state and nation. But that will never come to pass, of course, unless you take your work seriously, unless you realize that you have the most important office in the world to perform, unless you understand that, whatever school committees and boards of directors may or may not be, you have a function to perform in the state, and that you have got to continue to fit yourselves to meet every task of the teacher in a democracy.

If I were asked tonight to name some of the besetting problems of American life, I should name one of which perhaps you have rarely, if ever, thought. I venture to say that in America we face this very real danger: the danger of mob-mindedness and, on the other hand, the danger of social-Ishmaelism. Let me use simpler terms. The danger of America is that we think together and act apart instead of think apart and act together. But please remember that there really is no such thing as thinking together. Men and women cannot think together. Thinking is a process of individualization. I think alone if I think at all. Numbers, droves, herds, gangs cannot think. They react together. They feel together emotionally. They are melted and fused together, but a mob cannot reason. Mob and reasoning are contradictory and irreconcilable terms. Only individuals think.

Now, we in America are in great danger of regarding mob-mindedness as if it were a virtue, as if it really were a fine thing. The great passion of America is for uniformity, which means the submergence of individuality. After all, we forget that America is not to be made up of 120,000,000 people inwardly and outwardly alike. The office of America is to move all its sons and daughters to be themselves, borrowing the words of Emerson, to insist that they shall see with their own eyes, hear with their own ears, think with their own minds, and after that be resolved into some higher unity, which does not entail the submergence of the individuality or the personality of the least of these.

The great passion of America today is for uniformity and that passion is cultivated by those who do not seem to understand that uniformity is outward. Unity is inward and spiritual; uniformity is physical. I covet, just as you do, American unity, some higher unity of our life. But I loathe that ideal of uniformity which asks

every racial, religious, linguistic, or cultural differentiae to renounce itself, to abdicate its past, to forget and forswear everything that is distinctive and characteristic, the net result of which is bound to impoverish rather than enrich American life.

I sometimes put it this way: I have never yet seen a carpenter who levels up. Have you? He always level down, down, down. One levels even material things down. Leveling is downward, not upward. The business of America is not to level down that all the infinitely precious differences shall disappear but to insist that every group of Americans whether Jew or Catholic or Protestant, whether from Central Europe, South Europe, or East Europe, whether Nordic or Southern, whether Mediterranean or Baltic, whether British or Bulgarian shall be itself. We have a common America. While we have one form of government and a fundamental unity of political life, that unity does not and shall not ask of me that I forswear myself, that I renounce my past, that I surrender all that is distinctive and unique in my life in order that some majority may triumph in my self-effacement and my self-obliteration. That does not tend to the enrichment and the ennoblement of America.

What I believe to be the task of the teacher is to lead some little child, some little Greek Catholic from Roumania, some Roman Catholic from Italy, some Jewish child from Germany or Austria or Roumania or Lithuania, some Lutheran child from Scandinavia, some Quaker child from England, some Unitarian child from Transylvania, to respect itself, to reverence its past, to cherish its heritage. In the same way it is the business of my life to make my fellow Jews revere themselves as among the chief and largest contributors to the wealth, spiritual and moral, by which the world lives.

Over and beyond that, I am thinking of what a teacher can do in a classroom in Columbus in moving the native-born, Nordic children—I mean the children of families that have been resident in America for two, or three, or four, or five generations—to feel that the foreign-born child is different and has a different history. It does not speak English as they do. Its customs and manners are different. They must try to understand it. They must try to feel what it is that this child loves. If your classroom contains children of different nationalities, you ought to make it an experimental school for the working out of the problems of international life. It can be done. I have seen it done in the schoolrooms of New York. I have seen wise and noble teachers who have done mighty things to help children to understand one another. It is largely a matter of teaching history, and I know how badly history can be taught.

I know how badly history can be taught in the home. When our little daughter was five she was informed one day by her mother that she was to have an English governess and, having had German governesses up to that time, she burst into tears, wailing, "I don't want a King George governess." She was thinking not of George V but of George III. See how badly she had been taught history. England to her meant George III. George III was England, and all that had been conveyed to that child by German and Irish governesses was that England was an awful country. To her everyone that came out of England was wild and savage and as mean as could be. After that, in later years especially, I took the child in hand and tried to explain what England had been and what England had done for the world civilization, that, after all, England more than any other land is the guardian of liberties and the world's best things, and that the fundamental things in American life including the passion for freedom have come to us from England.

The teacher can do much in the classroom to make children feel respect for one another. Suppose you find children in your classroom thinking and talking contemptuously of Jewish children. Why not have the courage, even if you are not quite Christian and are only Methodist or Presbyterian, to tell the children what the Jews mean and what it is they stand for, that the Jew at his best is the same as the Christian at his best, and that there is the same tragic discrepancy between the Jewish faith and the Jewish practice that obtains between Christian faith and Christian practice. Why not help your children in your classroom to understand?

I do not wish to touch upon a purely religious question but after all, whatever else Jews may or may not be, Jews were the Christ-bringers of and to the world, bringing one of their own children, child of a Jewish mother. Make clear to children honestly and decently that after all Jesus was not a Methodist or Presbyterian but a Jewish child, a child of the Jewish people, a radiant young Galilean prophet and saint and martyr, whatever else or more he may have been. If you do that, you render your children a very real service, even more of a service for Christian children than for Jewish children, for we Jews have grown accustomed to ill-treatment through nineteen hundred years of misunderstanding and crucifixion and we are going on whether you treat us well or ill, but you yourselves cannot go on with self-respect in violation of the truth, which is in your own souls, touching the place of the Jew in the history of the world.

The task of the teacher in a democracy is first to establish the truth that the teacher is not a tenth-rate or a fifth-rate servant but is

a free and first-rate agent, an agent of the higher and the larger life of city and state and nation. Next, the teacher is to watch against mob-mindedness, is to be the mediator in the classroom. Finally, no one can do what a teacher can do in preparing children to be internationally minded. I remember some years ago when I was on a steamer going to Europe, there was a lovely little boy of four or five on board. A rather wicked storm arose. The mother of this little lad said to him, "Jimmy, you have got to go down to the cabin and go to bed and go to sleep." Jimmy disappeared, and after an hour his mother went down to see if he was in bed and asleep. He was in bed but he was not asleep, and instead of being in his pajamas, he was wrapped up in a huge American flag. His mother asked, "Jimmy, what does this mean? I told you to go to bed and go to sleep. Instead you have wrapped yourself in this huge American flag." And Jimmy replied, "Yes, mother, but I felt that the ship might go down, and if it does, I want God to know I am an American and not an Englishman." He might as well have said, "and not a Frenchman," or "not an Italian."

Is not that often the heart of a child? I know very well there is such a thing as decent and wholesome and useful and altogether forgivable pride in the child and that that child did exactly what any child might have done under the circumstances and perhaps ought to have done. Still, even though some two hundred percent Americans are on your school committees and in the homes of your children, teach your children that while they shall have a supreme love for America, they shall have no end of respect for every other country in the world that deserves respect, as every country does. Do not let your children think of America as being different from and therefore hostile to the countries of the world.

The place in which to lay the foundation of the League of Nations is in the American classroom, not at Geneva. Do not teach your children that because one child has a faith that is different from that of the others, therefore that child is inferior or is merely to be tolerated. In the heart of you who are teachers there must be something infinitely more than tolerance, for remember that tolerance is not very different from intolerance. Intolerance is frank hostility of everyone else; and tolerance is endurance of everyone else despite the consciousness of superiority. You remember that German quotation, "*Erdulden heisst beleidigen.*"

Do not tell your children to tolerate little Jews or little Italians or little French children. If those children are like the speaker, they do not wish tolerance. I would rather have intolerance, for then I

know that I am disliked and am not expected to like the other person. But if I am shown tolerance, I am expected to like and endure and tolerate the tolerant one. Who wants tolerance? Give me fellowship with men or leave me alone. Teach your children not to tolerate inferior peoples and races but to understand them. After sympathy and forbearance, then follow fellowship and friendship.

The politicians and statesmen in all lands have made a sorry mess of international relationships. I would like you to take the job into your hands and make it your task, so wisely, so understandingly, and with such consecration, that the children who come out of your classrooms will be lovers of their country and, at the same time, just, fair and even generous to all the peoples and races and faiths of the world.

SECTIONAL MEETINGS

Adult Education

Adult Education and Higher Institutions

Arthur Jay Klein[1]

The education of adults is but one aspect of education, while the higher educational institutions constitute but one component of our educational system. The relation between the two can be seen in proper perspective only from the point of view of an educational philosophy so comprehensive that it includes all phases of our educational process.

I, therefore, invite you first, to consider the general viewpoint of education that forms the background of this discussion; second, to examine the extent to which adult education has contributed to the realization of this philosophy; and third, to speculate upon changes in the organization and the attitude of established higher educational institutions which must be brought about if the ideals toward which adult education is groping are to be attained.

I

The attitude here represented is interested in all educational agencies and in the relationship between the agencies which serve, or may serve, to promote material welfare and individual and social happiness. This includes the entire expanse of educational activity upon all levels—pre-school, elementary, secondary, college, technical, and professional. It is concerned with the relationships between these levels and between the educational agencies operated on each level. Perhaps upon moral, rather than philosophical, grounds this attitude accepts as axiomatic the theory that we are under obligation to provide opportunity for every man, woman, or child to satisfy any intellectual hunger which may arise during life. Whether ambitions for education or intellectual improvement take the form of mere excursion trips into new fields or settle upon more permanent life purposes, the way to realization must be provided and kept. Not all people leave the trains at divisional points. Some stop at the way-stations and live there happily all their lives, but the trains continuously provide means of reaching points farther up the line to those

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who are prepared to go and are able to pay the fare. Highways and even footpaths both feed and draw from the main arteries of traffic. It is the ambition of this attitude of mind to provide harmonious diversity of the agencies which are adequate to meet the educational desires of all our people, in all situations, and at all periods of life.

In accordance with this point of view, discussion of the relationships between the adult-education movement and institutions of higher learning is approached with the conviction that learning is a process that may be facilitated by educational agencies throughout the entire period of life. The discussion which follows will, therefore, present two theses: adult education as now conceived is an inadequate rationalization of the ideals which it is attempting to express; and the organization of our established educational system must be revolutionized if these ideals of education are to be effective.

In order to understand the contribution that adult education has to make to the realization of these educational ideals and the inadequacy of its program to secure complete accomplishment, it is desirable to review some of the circumstances of the development of the organized movement in the United States. Consideration must also be given to the present interpretation of adult education, and a definition of the movement must be framed.

II

When one reflects upon the remarkable slowness of educational thought to embody itself in popular speech, it is evident that the words "adult education" quickly became a phrase by which one might easily conjure for one's self a reputation for progressive intellectualism. Its only rival is glib use of psychological this-and-that-ism. Popular use of the expression came first apparently from England shortly after the War with the restored ease of travel and with the interest in things European that rode in on the fascinations of war. No small contributor to the acceptance of the expression and to the vague series of ideas covered by it was the interest manifested by the Carnegie Corporation in transplanting the English movement to the United States, but I would not belittle in the slightest degree the debt that we owe to the Carnegie Corporation for creating consciousness of the educational opportunities covered by the term "adult education." Through the leadership and support of the Carnegie Corporation, the American Assocation for Adult Education was formed.

This organization has done much, and will doubtless do much more, to develop the philosophy and practice of those who are inter-

ested in problems of adult education. One need not be a cynic to recognize that the effulgence of the new educational revelation was considerably heightened by the expectation that the Carnegie Corporation would distribute substantial sums of money to promote the adult-education enterprises which were already well established. As one director of university extension expressed it upon the occasion of the first conference on the subject called by the Corporation, "I am for this adult education. If there is any money to be distributed, I want in." If the actual cash expenditures for promotion fell short of the hopes of the ready handed, it but demonstrated the good sense of those who held the purse strings. The effects were out of all proportion to the material aid actually distributed. Those interested in adult education in the United States soon forgot the original stimulus to attention and surrendered to the glorification of a phrase.

The method and occasion that led to the acceptance of the term "adult education" inevitably resulted in a distortion of emphasis both within the field of education that it was supposed to inclose and with reference to the relations of this field to educational activities known by other names. Adult education was proclaimed as a new revelation from far lands across the seas. As a matter of fact, it was new only in the sense that it was a new name for a whole series of educational activities that had already been highly developed in this country—class extension, correspondence study, night classes, provision for part-time study, education of adult illiterates, agricultural and home-economics extension, short courses, continuation schools, shop classes, circulating libraries, and reading courses. It was a false vision, because in its early stages it proclaimed as ideal the narrow view and limited scope of the English adult-education movement in a country that had already developed an adult-education service far broader in usefulness and ideals than that of England.

The only amazing thing revealed was that even with our genius for organization we had overlooked a magnificent opportunity to set up an organization, to promote a whole series of enterprises, each of which already attached to some university or college, state department of education, or voluntary organization was revolving in its orbit like an apple at the end of a string. Undoubtedly, this was a terrible state of affairs! It was corrected with praiseworthy promptness, and an organization was formed upon a sensible and constructive basis avoiding the pitfalls of interference with recognized educational institutions and organizations.

Proclamation of adult education as a new evangel of learning developed with curious inconsistencies and adherences. Motive is a

most difficult thing to establish in the legal prosecution of crime or fraud. It certainly behooves us, therefore, to tread softly when we impute unworthy motives to anyone connected with such a worthy cause as the promotion of adult education. Our chuckles may well be private ones when we encounter examples of apparently complete breaks in the historical continuity of personal attitudes and thinking with reference to this movement.

If you will recall the names of those who were prominent in the promotion of the adult-education movement and of those who are regarded today as the authorities and leaders in the organized movement, I wonder if you will find many of the people, who for ten, fifteen, or twenty years before adult education was even mentioned, were actually working at various phases of education for adults. I wonder if you will recall the name of more than one leader in the field of university extension. Will you remember the name of any leader in the great and well-established organizations of agricultural and home-economics extension? Among the leaders of the promotion of the adult-education movement, was there one of those far-seeing men who made the training of the teacher in service one of the most fruitful procedures of our educational system? Do you remember among the promoters any man or woman who actually led the fight to remove the blight of adult illiteracy? Perhaps one should not criticize these workers who were so closely engaged upon the job at hand that they never secured sufficient publicity for themselves and for their work to establish a new national movement. Perhaps it is just as well that it required someone else to create awareness of the wider relations and implications of the task that these workers were actually doing.

Adult education as a principle of thinking, which attempts to provide a philosophy for actual accomplishment, is undoubtedly in the early stages of development. We may, therefore, be compelled to search widely if we are to understand what this principle is and the philosophy upon which it is based. For the most part, considerable vagueness of conception exists. It is obvious that the phrase, "adult education," is not currently used in any inclusive sense to express what the words mean—the education of adults. Even though emphasis on "adult" is undoubtedly prominent in consciousness when the phrase is used, no one ventures to absorb into the adult-education movement the instruction carried on by the professional and graduate schools, and there is even some hesitancy about bringing the summer school into the purview of the movement. On the other hand, no one would exclude from the nebulous and cloudy embrace of adult

education the education of children and of those of extreme youth who have deserted the conventional agencies of education provided by our school system from the elementary grades to the college years.

These facts may not indicate real vagueness of concept in the movement. Names frequently acquire definiteness of meaning more fruitful than the words used. Not all who have been baptized are Baptists. The Methodists are not the only body with a method of salvation. The Christian church claims no monopoly of Christianity. So it is not simply upon the grounds of failure to adhere to the age limitations implied by the word "adult" that one must regard the term "adult education" as lacking in definite meaning to many who proclaim adherence to it.

In conversation with a nationally known public-school man recently, adult education was mentioned. "Yes," he said, "I think that the meaning of adult education should be extended. It should not mean, as it does now, simply the teaching of adult illiterates to read. The concept should be broadened to include teaching these people something of our social standards and ideals of government." Apparently our postwar program of Americanization was regarded by this gentleman as a more inclusive program than that of adult education. On the other hand, I am told that at a recent conference on adult education, the organizations devoted to removal of adult illiteracy and to training of the foreign born were omitted from a list of those whose activities were to be regarded as properly belonging to the field of adult education. Recently, a questionnaire was prepared by the Bureau of Education to be used in connection with a survey of the colleges receiving Federal subsidies. It dealt with agricultural and home-economics extension; training of teachers in service; correspondence study; extension classes; municipal reference services; library-extension work; the use of motion pictures, slides, and radio; public-lecture services; short courses and institutes—with the whole series of educational activities carried on by the institutions in addition to their so-called "resident" instruction. For want of a better name the questionnaire was called "adult education."

The association of a variety of activities under this name was regarded as a daring and foolhardy procedure since it implied that in all these activities was something of common character and purpose. Protests were promptly filed. Amazement, even fear for the integrity of our institutions, was expressed that the Bureau of Education should venture to associate work of such diverse kinds under one title.

Some teacher trainers disclaimed any similarity between the training of teachers in service and the elementary and then unorganized

purposes of adult education. Although itinerant teacher training was for adults, it was a different process from adult education and not to be associated with it under any circumstances. Some even protested that, while many of the methods were the same, the training of teachers in service must not be confused with university extension. Some agricultural and home-economics extension directors operating under Federal co-operative extension acts were horrified to find themselves classed as adult educationists. They asserted that the Bureau should have recognized that co-operative agricultural extension is a well established, highly organized activity occupying respectably a specific educational field.

The university-extension folk did not like to be placed in the same category with agricultural extension, even though for the most part, they were willing to have their work classified as adult-education activity. University administrators wanted to know why evening graduate classes conducted on the campus should be subjected to the slur of classification with the superficial and unsystematic efforts that properly constitute the field of adult education. Examples of this kind of misunderstanding might be extended, but these demonstrate sufficiently that a number of people in educational work interpret adult education as a deathbed measure for the educational salvation of the unfortunate and criminal classes.

It is apparent that analysis of current usage and understanding of the term, adult education, fails to assign to it any clear and precise delimitation of educational field or educational purpose. This is, of course, no condemnation of the movement. Lack of understanding of many fairly obvious matters, even among intelligent folk, is so common as to be almost characteristic. Undoubtedly, we should examine the definitions and philosophy which the experts ascribe to adult education.

The subcommittee of the National Education Association on articulation in the field of adult education presents the following definition as a starting point for clear thinking and purposeful work and effort.

> Adult education is defined as including all forms of educational activity in which the individual voluntarily enrolls after compulsory-school age and pursues as an activity, subordinate to his major efforts, a course of study, reading, or discussion, which is reported or endorsed by some responsible agency or organization and which has within it continuity and leads to some definite objective.[2]

[2] National Education Association. "The Articulation of the Units of American Education," *Seventh Yearbook, Department of Superintendence.* Washington, D. C.: National Education Association, 1929. p. 480.

It is apparent that this definition does not adequately represent the spirit that animates those who champion the cause of adult education.

It seems to me that this committee in another place more nearly states an educational ideal which is basic, not only to adult education, but to other movements and means of promoting intellectual growth. The committee states "adult education emphasizes need and desire, not age, as fundamental in education and seeks to impress upon public consciousness the basic ideas of continuous mind expansion and adjustment necessary for personal growth and social progress."[3] It seems that we have here an excellent statement of an educational ideal. In so far as adult education champions and contributes to this ideal, the general trend of this paper has no quarrel with the movement. I do wish, however, to protest against any impression that this ideal can be confined to a movement that carries the word "adult" in its descriptive title. The principle belongs to the field of the general philosophy of education.

The great service of the adult-education movement consists not in the impetus given to specific activities in the education of adults, but in the contribution made to the development of two factors that are essential if the conception of education as a life process is to be realized. Its primary contribution consists in the emphasis that it has placed upon the ability of adults to learn and upon the integration of learning with living. Let us consider these points briefly, not as distinctively adult-education principles, but as general principles of education whose realization involves a changed attitude and reorganization on the part of all educational agencies.

No discussion of this kind can ignore the work of Professor Thorndike and his colleagues embodied in the book *Adult Learning*. Briefly, this study shows upon the basis of an exhaustive series of experiments that the curve of ability to learn rises to its height at about the age twenty-five and then slowly declines until at forty-five it reaches the level of eighteen years. Study of the rate of decline after forty-five was not so thorough as for preceding ages, but the evidence submitted tends to indicate that the curve of learning ability descends after forty-five at about the same angle as it rises from five to eighteen. In other words, the study makes it appear probable that persons from twenty-five to forty-five have about the same ability to learn as do young people from eighteen to twenty-five years of age and that the ability to learn during the period from forty-five to about sixty is approximately the same as that during the years from five to eighteen.

[3] National Education Association, *op. cit.*, p. 479.

This study has been hailed as affording remarkable support for the contentions and ambitions of adult education. If any reader has not read Professor Thorndike's book but has depended upon reports and quotations, he no doubt has the impression that at last the ability of adults to learn has been established. To me this is not the important point of the study, and I doubt whether it is the important point to its authors. Elsewhere I have said: "Common experience has always afforded practical evidence of ability to learn after the first flush of youth, but Professor Thorndike's studies now afford the consolations of science to the uncertainties of common knowledge."[4] I can perhaps do no better than to quote a statement from the same article written in another connection:

> The importance of Professor Thorndike's *Adult Learning* lies not primarily . . . in the field of adult education but in the emphasis it gives to the necessity of readjusting our conception of the profitable organization of the education process during life. We have in the past, because of our belief that youth was the best and easiest and most effective period for learning, concentrated our educational efforts largely in continuous periods during early life. Since this was supposed to be the period for learning, we have insisted that students learn a great many things that could not have immediate use. We have proceeded upon the assumption that if we did not teach the student when he was young, he would never be able to acquire the information and knowledge that in later life he would need. If the conclusions of *Adult Learning* are accepted, the logical result will be an entire reorganization of the content of the material which is presented for learning to youthful students and the spreading out of the process in accordance with some rough plan whereby the individual will systematically continue to study and to acquire intellectual furniture throughout life. . . . In other words, we will treat the mind less as a warehouse which must be filled for a lifetime and organize the system of education more in analogy with the method through which we acquire meat and shoes and bedsteads as our need for them arises.[5]

Analysis of life activity is regarded as the progressive and forward-looking basis for curricular construction, for "unfortunately the life-activity is usually that of mature age while the period of preparation for that life-activity is now concentrated in a period separated from use by many years."[6] Professor Kilpatrick emphasizes the point that . . . learning . . . is *intrinsic* in life, having a real function to play in the development of life. . . . much, if not most, of ordinary school learning is *extrinsic* to the life of the learner, not hav-

[4] Klein, Arthur J. "Education," *American Journal of Sociology*, 34:1153, May, 1929.
[5] Klein, *op. cit.*, pp. 1153-54.
[6] Klein, *op. cit.*, p. 1154.

ing been called for by the present demands of his life as he now lives that life nor, when learned, functioning in any full sense in that life as it now is.[7]

III

This brings us to my second thesis, namely, that the organization of our established educational system must in the end be revolutionized if it is to make effective the ideal of education as a life process. I shall base my discussion upon the situation in the higher educational institutions. The same points might be made concerning conditions that exist in the elementary and secondary fields.

Under our present block system higher education is hampered in its reorganization to meet actual life situations by the traditions of a whole series of artificial degrees and distinctions. We have set up upon the highway of educational progress certain tollgates at which one must pause and submit to examination and assessment. The tradition of the four-year college course leading to the first degree marks one of these stopping points. A year of residence for the Master's degree, two years of residence for the doctorate, and the complicated side gates leading to the degrees of Doctor of Medicine, Bachelor of Laws, and Bachelor of Theology mark other divergent stopping points.

Undoubtedly, it is characteristic of human nature to seek the distinctions of certificates, degrees, and diplomas. It is unfortunate that our educational system has been so largely restricted by this seeking after vanities. Anyone who is familiar with recent developments in higher education must recognize, however, a disposition on the part of educational folk to break down these barriers and to provide greater freedom of movement. The whole junior-college development is evidence of this tendency, but especially significant is the development of terminal courses with specific objectives serving life purposes which are realized by the student at that period. The increased interest in what is called training for the intermediate levels, manifested in the study now being conducted at technical institutes, such as Pratt and Wentworth, is additional evidence. The fact that in at least one of our great universities the student may register for the degree of Doctor of Medicine or Doctor of Philosophy at the end of his sophomore year and proceed without pausing for an intermediate degree points in the same direction. The development of honors courses in our higher institutions is significant.

[7] Kilpatrick, William H. "The Philosophy of American Education," *Teachers College Record*, 30:20, October, 1928.

The extension and service activities of the universities, colleges, and teachers' colleges, however, undoubtedly afford the most promising and logical field for the realization of the ideal of education as a life process. These activities are already attached to higher institutions and have been developed to a considerable extent. We may, therefore, devote ourselves to consideration of the relation of the present organization of these activities to the block system of higher education and attempt to indicate not only the obstacles to progress afforded by this relationship, but also indulge in some speculation with reference to reorganization.

So far as I know, no one has yet proposed that adult-education activities be severed from present established educational institutions in order to set up new and separate organizations for conduct and control of this group of educational processes. There has been much loose talk about the unsympathetic attitude of the public educational system toward the ideals of adult education, but no one proposes separation for adult-education work similar to that proposed by some of the advocates of vocational education who would create a dual system of public schools in order to insure a pure and undefiled type of vocational training. Nevertheless, the prevailing organization of these activities in our higher educational institutions leaves much to be desired.

Where university extension has been developed to a relatively high degree, a separate organization has usually been set up which, to a large extent, parallels and hence seldom meets resident instruction. It is true that sometimes the director of university extension is admitted to the faculty body or even occupies a position co-ordinate with the deans of the colleges, but this relationship is not in itself a logical one when the functions of the director of extension are considered in these highly developed situations. In fact, he is a second president of a subordinate university. Even when the resident departments or the deans of the college approve courses offered by extension and even when their consent or approval is required for appointment of members of extension staffs in their fields, their attitude is most frequently one of tolerance and concession rather than one of interest and responsibility comparable to that shown in their resident work.

The records of extension activities are most usually kept separate and distinct from the records of the institution as a whole. Allowance of credit earned by extension involves transfer from extension to residence comparable to that of transfer from one institution to another. These statements are, in general, true of the activities organized as

university extension. The separation of interest and of contact is even more exaggerated in the cases of trade and industrial education and of agricultural and home-economics extension.

Failure to integrate extension activities and resident work is in part due to different views of education, but even now there is a border-line territory in which it is possible to distinguish from what is called "regular" work only because of administrative rulings on the point. In one institution with which I am familiar, it is possible for a student to obtain his Master's degree in classes conducted from eight to ten in the evening. These classes are conducted by the resident department. Across the hall are similar classes, for which no credit is given, conducted under the auspices of the extension division by men equally well trained. Of two neighboring institutions, one conducts Saturday morning classes for teachers as a part of regular work, while another conducts the same sort of Saturday morning classes under the auspices of the extension division. The first institution refuses transfer of credit from the second institution, because the second institution does this work by extension. I know of one university that at one time conducted correspondence courses obtained from another institution. No credit was given for these courses when conducted by its own organization, but students who took the courses in the institution from which they were procured might transfer credits thus earned to the university. These examples are obviously cases of artificial barriers erected and maintained by administrative regulations.

Probably in the field of teacher training, most progress has been made toward breaking down distinctions between the functions of resident and nonresident work. Someone should give us a detailed presentation of these developments in the teacher-training field, not from the point of view of the techniques of teacher training, but from the idea of education intrinsic to student living. Lack of space makes it impossible to enter into an extended discussion of these teacher-training practices and attitudes. If you will recall the functions and procedures of itinerant teacher training, of the six-weeks and short spring courses, of district and State conferences, and of the teaching-center plan as illustrated in the Buffalo schools, the point will be clear.

Acceptance by resident departments of the idea of education intrinsic to living will inevitably break down the walls that separate extension work from regular instruction. It was said several years ago that the greatest obstacle to realization of the ideals of university extension was the ignorance of university administrators. But today college and university administrators, whose understanding of university-extension activities was pretty largely confined to appreciation

of their publicity value, are grasping the connotations of the term, adult education. They tend to reconstruct their educational outlook and to regard both as means of contributing to the attainment of the common objective of a never-ending educational process. In general, the higher educational institutions are willing that the offerings of their extension activities shall be devised to satisfy the needs and desires of nonresidents for any form of cultural, vocational, or professional education that properly belongs within the scope of higher education. No one who knows the situation will contend that integration of resident and nonresident instruction can be brought about simply by confining extension activities to reproduction of courses given in residence.

Extension agencies in our universities and colleges are handicapped, however, by an even more amazing weakness. They are to an astounding degree unaware of each other and of their common purposes. To choose but one example, the wide gap between the organization and conduct of agricultural and home-economics extension and general university extension in our larger land-grant universities indicates a degree of departmentalization that is hardly less important than exaggerated departmental separatism in resident instruction. This separatism indicates a narrowness of view that one would hardly expect from those whose interests touch so closely the intellectual and vocational life of the people themselves, and it displays an amazing blindness to the possibilities of utilizing these two organizations to serve common purposes. Another example may be found in one institution where four distinct extension organizations exist in addition to the related activities directly supervised and controlled by the president. Each of these organizations, without the knowledge of the others, sent recently a representative of the institution to a local conference upon matters that concerned the development of extension work. The president himself attended the same meeting and was astounded to discover that he already had four representatives present. In my opinion, this apparent ignorance of each other constitutes one of the greatest weaknesses of the so-called adult-education activities of higher education. Probably the first step toward greater effectiveness is the development of an organization within the institution itself which will make the workers in each of these fields aware of their common purposes and of the possibilities for co-operation and coordination.

The organization of the activity of higher educational institutions in this field is considerably complicated by another factor. When an institution confines its work to the boundaries of its own campus, its

contacts with other institutions serving the same territory are relatively unimportant. The fact that the institutions are giving much the same courses does not make much difference; but, as soon as two institutions extend their work beyond the campus and attempt to serve other communities and individuals many miles distant, they come into immediate contact and frequently into conflict. In the territory around New York City an excellent example illustrative of the point is presented. Columbia University, New York University, Rutgers University, and perhaps others are offering extension classes in the same adjacent territory. In many instances, the students available in the community for a single course would constitute one respectable class. When they are divided between three classes, each conducted by a different institution, the expense is tremendously increased and the effectiveness of the work decreased. If the purpose of higher educational institutions which enter this field is educational service not institutional aggrandizement, it would seem that any satisfactory organization of these activities by a single institution would involve closer relations and co-operation with other institutions serving the same territory. Geographical division of territory will not accomplish the purpose, nor in many cases will division of subject-matter fields. The proposal that the institutions attempt common utilization of the most convenient teaching agency, based upon common standards and purposes, perhaps implies a degree of co-operation that is utopian, but we have here and there practical demonstrations of co-ordination between institutions that lead to the conclusion that practical arrangement and practical understanding of this kind are possible. Adequate development of these educational facilities will lead inevitably to some form of co-operation through the association of institutions in the development of a territorial program.

If we assume that it is possible to co-ordinate the extension activities of a single institution and to secure co-operation between institutions, the higher educational agencies for adult-education activities will be tremendously strengthened. We would thus go a long way in providing educational opportunities for nonresident students that would intrinsically operate in their lives in Professor Kilpatrick's sense. Persons, who now regard the resident system as their only means of educational salvation and who make tremendous sacrifices in order to give these advantages to their dependents, are now demanding service of the kind contemplated. I am convinced that opposition is caused by no lack of interest in developing effective education, but it arises from the fact that these activities are not sufficiently respectable in the eyes of the persons who are served.

In effect this paper is a plea for acceptance by our established and respectable educational agencies, both higher and lower, of the principle that the learning process may best be continuous throughout life and so arranged as to come at the time when intrinsically it will contribute most to life. It maintains that the emphasis that adult education has given to this purpose can be effective only by integration with our established educational system. The immediate task is the recognition of the basic principles and procedures which will in the long run make the principle effective in a single system of education.

Can Parents Be Educated?

Mrs. B. F. Langworthy[1]

Once upon a time a smart young man, who had for years driven a physician on his rounds and who had learned many medical terms and customs, set up a practice of his own in a distant city. He had had no medical education and, after a series of untimely deaths among his patients, he was tried, convicted, and sent to prison on a charge of malpractice according to the principle that the lives of citizens must be protected by law from such fraud. Once upon another time there were two young men, one the son of a lawyer and the other a bad-debt collector, who formed a partnership for practising law. For several years they made a living by settling cases out of court and trying questionable cases in the municipal court. But one day they make a mistake so grievous that they were detected, tried for practising law without a license and its prerequisite training, and they too were sent to prison for malpractice.

Once there were two young people, a man and a woman, who entered into a solemn partnership to make a home and supposedly to rear a family. But when their children came, they almost lost them through ignorance of their physical needs and nearly lost their friends and neighbors through lack of knowledge of their children's mental and spiritual needs. In the course of time, one boy became a penitentiary boarder, one died of tuberculosis, and two became social misfits who contributed nothing to their community except degrading influences. But there was no law to protect society against these partners in family life who were potential agents of far greater ill than the other two.

What a travesty it is that many state universities feel obliged to make it compulsory for every male student to learn how to destroy

[1] Chairman, Adult-Education Conference, Chicago.

life, but very few offer comprehensive courses designed to teach life conservation through studies of family life, the only universal profession in the world. Gesell quotes Herbert Spencer as saying, "Is it not an astonishing fact that, though in the treatment of offspring depend their lives and deaths, and their moral welfare or ruin, yet not one word of instruction on the treatment of offspring is ever given to those who will hereafter be parents." Through a survey made by the Merrill-Palmer School, at Detroit, it is revealed that nearly a thousand elementary or high schools in the country give some kind of family-care courses, either in home economics, health and social hygiene, biology, first aid, or home nursing, but that, as a whole, the subject of family care as a well-rounded course is sadly lacking.

At a recent meeting of the Board of Managers, the National Congress of Parents and Teachers passed some extremely forward-looking resolutions calling on the colleges, summer schools, normal schools, public libraries, and public-school systems to give special attention to problems of parenthood and home making. At the same time the Congress commends the United States Bureau of Education for its activity in this field. Can parents, having plunged into this profession, untrained and tragically ignorant, be educated to their carelessly assumed task? In answer to those who maintain that no one learns a new thing after forty, we point to the thousands of men and women who learn to drive motor cars, to play the piano, operate the typewriter, or to paint pictures after fifty years and do it well. How then shall we say that they cannot learn to be good parents if they set about it with will, persistence, and patience?

Dr. Van Waters in *Parents on Probation* describes nineteen different kinds of bad parents—all ignorant ones. Most of these never realized that they needed to know the facts here enumerated. The young child's physical needs is the simplest of all the problems and the one on which there is the most help to be found. This includes necessity for sleep and quiet solitude, for fresh air and sunlight, for requisite qualities and quantities of food, with or without the supervision of physicians. The psychology of the young child as a subject of study appeared twenty years later than that of feeding. In early days many children died of starvation because no one knew why they would not eat. Others were allowed to cultivate temper tantrums, which resulted in disaster in later life. Children became so self-centered through the unwise adoration of the adults in the family that they were utterly unable to accommodate themselves to any group and became social misfits. This new subject is of importance to the parent and one about which there is much helpful printed information.

The health of the adolescent or high-school student is a subject sadly neglected as evidenced by the complacent parent who, having pulled the child through the elementary grades, launches him into high school with as much carelessness as he would shoot an arrow into the air. Many parents who agitate regarding the moral dangers of adolescence are oblivious to its physical conditions. Hence, little hearts that were strong in early childhood give out under strenuous high-school athletic games; nutritional difficulties arise as a result of the student's choosing his own food in the school lunchroom; heavy home study saps the strength; eye fatigue sometimes develops from close work and poor light. Indeed, the very physical changes of the adolescent make a heavy drain on his strength.

The psychology of the adolescent is a subject the ignorance of which is not all on the part of parents, as any college professor will acknowledge, but this ignorance is the cause of untold misery in the adolescent-parent relationship. Antagonisms spring up between parent and child that are sometimes obliterated only by years of separation, and problems that could be solved with comparative ease if mental processes were better understood build a stone wall against which hearts are often broken. Because of this lack of sympathetic knowledge, an atmosphere of criticism, suspicion, and resentment surrounds the whole situation; the child often becomes reckless and extravagant in his actions, just to prove that he needs no control outside of his own sense of ethics. The ethics of each generation change, after all, only in detail and we foolishly mistake the details for the fundamentals.

If, then, we so sadly need education for parenthood, we must look about us for means to fill that need. We must investigate the methods already in use to bring help to the overtired and underprivileged father and mother as well as those of leisure and wealth.

The parental-education movement began with a curiously intense impetus about thirty-five years ago when G. Stanley Hall, Felix Adler, and Elizabeth Harrison preached and wrote about the necessity of parents' knowing more about their children. The effect of this work is incalculable, for out of it came, almost simultaneously, several group movements with the same purpose—child welfare. The Congress of Mothers, now the Congress of Parents and Teachers, was organized in 1897, the Child Study Association a little earlier, the American Child Hygiene Association, and the Child Health Association of America a little later. Now many groups such as the Y. W. C. A. and the American Association of University Women are including education for family life in their programs. The Congress

of Parents and Teachers is the largest of these organizations, having nearly a million and a half members in forty-eight states. We know it the best not only because of its size but because, with one of its developments—the Parent-Teacher Association—it operates in connection with the public schools. It has the advantages and disadvantages of size and the use made of it by many school principals to raise money for school furniture and certain projects. The other organizations are smaller but do more intensive study of child problems and operate with only the support of interested persons and child specialists.

With all these organizations carrying the same general program, the methods of securing information vary somewhat; indeed, they vary inside the organizations themselves, some groups being able to carry what others cannot. As the years have passed, these organizations have developed from the simple little sewing-circle or parlor type of meeting through more or less elaborate entertainments to the scientific study of the child by one or more of the following methods.

1. Lectures or talks.—These are given about once a month in the schoolhouse or other public building, to groups of from twenty to two thousand. They have the effect of giving publicity to the movement, stimulating thought, and sometimes rousing the members to community action of one kind or another. They have the advantage of reaching a larger number of parents than could be interested in study. Out of these lectures sometimes grows the study circle.

2. The study circle or discussion group.—Study by a group has the far greater advantages of bringing together the same persons for consecutive discussion, of more frequent meetings (every week or two), and of some preparation by way of reading. The group generally appoints one of their own members, who is fitted for the task, or hires a professional leader to prepare the lessons and direct discussion. The best results, perhaps, are attained if a prospectus is prepared, conveying the subject, some leading questions, and a book list, even though but one textbook is being used, and sent to the members a week before each meeting.

3. Mail topics.—In rural communities where groups are difficult to hold together, topics for study can be arranged by whatever organization is able to do it, the State Congress of Parents and Teachers, the county or neighboring city library or the department of parental education of the state university. This may be extremely helpful but it lacks the advantage of group discussion and is therefore rather one-sided in its effectiveness.

4. Conferences.—Conferences of parents with teachers and principals are always advantageous if they are not too hurried and can

be kept free from criticism and harsh personal disagreements. Even when all other methods of educating parents are employed, this should be occasionally added to them.

5. Correspondence.—Contact by direct correspondence with specialists who conduct such work, when carried on like correspondence courses in colleges, is satisfying and efficacious, particularly if there be a free interchange of questions and answers. Some big newspapers and home magazines carry on such correspondence with mothers, though of course with no continuity or plan.

6. Home study.—Accurate records kept by the parents in diaries or score cards, if done without prejudice, are of great value. The mothers who do this type of studying often help on the school playground or in the nursery school under the supervision of the teacher.

7. Home visiting.—These contacts with visiting teachers have great educational value on account of the intimate environment when the child, his mother, and the teacher can confer together.

8. Parental courses for credit.—These are given in a few colleges with some previous scholastic requirements. The colleges generally give the same courses, without credit, for those who cannot qualify.

9. Training for leadership of study groups.—Training for leadership is so necessary to the development of universal parental education, while we are waiting to have the subject taught in public schools and colleges, that it must not be overlooked. In Illinois this work was done by the head of your Ohio State University Department of Parental Education; and, as a result, there is now a possibility of forty or fifty groups of parents being directed through courses of study by well-trained volunteers. The Illinois Congress of Parents and Teachers feels a lively sense of gratitude to the University for this lending of Dr. Charters to their need and hope to return the blessing by passing it on to the parents.

10. Habit clinics.—Habit clinics are sometimes called psychiatric or child-guidance clinics. They are sometimes conducted by a few school systems which engage competent specialists to carry on the work, but most of them are a matter of private practice and are, naturally, expensive. Here the parent comes with the child who has contracted bad mental habits—temper tantrums, negativism, fear complexes, and so forth, and here child and parent alike are re-educated to become happy, normal members of their family circle and society. Unfortunately, this is of a remedial nature instead of preventive, and each new bad habit may have to be similarly diagnosed and treated, unless a general educational program can be instituted for parents.

There are many excellent scientific books which are also easily understood that may be studied to advantage, either alone or in discussion groups, and there are some magazines devoted to the subject of parental education. Any list would leave out books that some of you consider the best, but I am running the risk of criticism by adding a short list to this paper.

In closing may I tell you a bit of a story that is old enough to be new to some of you and which illustrates the poignant necessity of parents becoming educated. Two men were sitting on a bench watching a parade go by. It was a fine parade, with plumed hats and a band, and the two spectators were much impressed by its grandeur. After it had passed to the next block, they beheld a man in uniform half running and panting, trying to overtake it. He was so visibly distressed that they called to him, "Don't try to catch up with them; it's too hot." He panted out something but kept up his running pace. Again they called to him, fearing that he would be overcome. "Come and sit down here; you can't catch up with them—they've gone." At this the man gathered his breath and gasped, "I can't stop, I've got to catch up with them, I'm their leader." And so although it may nearly kill us, we have got to keep up with our children, and only education for our task will make it possible.

LIST OF HELPFUL BOOKS

FOR THE CARE AND FEEDING OF THE INFANT—

Aldrich, Charles A. *Cultivating the Child's Appetite.* New York: Macmillan Company, 1927. xii + 127 pp.

Bayley, M. E. *Practical Talks on the Care of Children.* New York: E. P. Dutton Company, 1922. xxi + 344 pp.

Emerson, William R. P. *Nutrition and Growth in Children.* New York: D. Appleton Company, 1922. xxix + 341 pp.

Holt, Luther E. *Food, Health and Growth.* New York: Macmillan Company, 1922. viii + 273 pp.

MacCarthy, F. H. *The Healthy Child from Two to Seven.* New York: Macmillan Company, 1922. xiv + 235 pp.

PSYCHOLOGY OF THE YOUNG CHILD—

Baldwin, Bird T. and Stecher, L. I. *Psychology of the Pre-school Child.* New York: D. Appleton Company, 1924. viii + 305 pp.

Blanton, Smiley and Blanton, M. G. *Child Guidance.* New York: Century Company, 1927. xviii + 301 pp.

Cameron, Hector C. *The Nervous Child.* New York: Oxford University Press, 1924. viii + 234 pp.

Canfield, Dorothy. *Mothers and Children.* New York: Henry Holt Company, 1914. xii + 285 pp.

Gesell, Arnold L. *Mental Growth of the Pre-school Child.* New York: Macmillan Company, 1925. x + 447 pp.

Gruenberg, Benj. C., ed. *Guidance of Childhood and Youth.* New York: Macmillan Company, 1927. xii + 324 pp.
Thom, Douglas A. *Everyday Problems of the Everyday Child.* New York: D. Appleton Company, 1927. xiii + 349 pp.
Watson, John B. and Watson, R. A. *Psychological Care of Infant and Child.* New York: W. W. Norton Company, 1928. 195 pp.

PSYCHOLOGY OF THE ADOLESCENT—

Clews, Elsie Worthington. *Social Freedom: a study of the conflicts between social classification and personality.* New York: G. P. Putnam's Sons, 1915. 106 pp.
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[2] Prepared by librarian of Elizabeth McCormick Memorial Fund, March, 1929.

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Art

Art and Education

Gerrit A. Beneker[1]

The answers to the question, "What is art?" are as varied as are the types of human nature. I am going to ask you, however, to consider art not as a thing, but rather as a way. We find in the dictionary the various definitions which have come down to us by consensus through the ages. The first is that "Art is opposed to science." We know that science comes from a word meaning "to know," art from a word meaning "to do." Each is useless in itself; and each is dependent upon the other, yet science has run away with the job of life. An eminent mathematician has said that science has progressed at the rate of multiplication, while art has progressed not even at the rate of addition.

Two years ago I met the Dean of Economics of one of our great schools of technology—a venerable gentleman who has been teaching economics for forty-two years. I tried to interest him in art for his students. "Well," he said, "I don't know much about art. Last Sunday I was in the Boston Museum, and ten minutes was too long." When I saw I could not interest him by talking art, I showed him pictures. Immediately he said, "Oh, but I did not see any pictures like these in the Boston Museum. This is economics. If I could get a set of these," he said, "I would put them in the classroom for the boys to study."

Some time later when lecturing at this institution I saw the Dean of Economics sitting in the front row so I told the audience that he had said that ten minutes in the Boston Museum was too long. "But," I continued, "let us not blame the Dean of Economics. If he had gone into the studio of any artist in Boston and had offered to talk economics, I am sure that he would have come back to his classroom and said that artists do not know the first thing about economics—and he would have been right. It is the way in which we have been educated. Students are stepping out to take their places in everyday life without any knowledge of the relation of art to the management of affairs. At the head of organizations—financial and industrial—are just such men, technically trained in a particular

[1] Lecturer, author, and artist, Truro, Cape Cod.

activity but with little knowledge or interest in art. Nor is the condition any better in the great art schools, for they are conducted in isolation from other sources of education, and their students have nc contact with life or knowledge other than the technique of art—young people who have nothing to say through their medium. They are rightly judged only on technical stunts in paint.

My idea of a real art school is one where the young person who intends to become a painter or a sculptor or a poet or a literateur or a dramatist studies the technical training of his chosen field, let us say, five mornings a week, but five afternoons a week he studies economics, sociology, philosophy, psychology, comparative religion, history, and, not the least, English. I believe that the art school at Ohio State provides the things which the young art student should have, for it ideally combines the study of the techniques of art with courses which bring the student into touch with the science and with the knowledge and life of the world.

By a second definition we find that "art is the employment of means to the accomplishment of some end." That is not the means to an end, but the *employment* of means. To my mind, that denotes management. How—*how* we manage life itself.

The next definition tells us that art is "the skillful adaptation and application to some purpose or use of knowledge and power acquired from Nature"—Nature is spelled with a capital N.

Now we come to the last definition, which refers to painters and artists, and it is, "the power of perceiving and transcribing the beautiful and the aesthetical in nature, as in painting and sculpture." Art is not merely looking at things; it is the power of perception, that is, looking through, looking deeply into; it is the use of the talent which the Creator has given us, transcribing what we see so that others may see the same. Then, as it relates to each and every one of the uses in everyday life, art is "practical skill, dexterity, knack, cunning."

There is an art in every job, no matter what that job may be, so let us look at art not as a thing but as a way. If the greatest art is the art of living, most certainly it must lie within the realm of fine arts at least to suggest to us how to live. But because most of us artists are only technically trained in our medium, we sometimes suggest to mankind some very queer ways of living. One of our great foundations sends abroad every year some fifty people, among whom are three or four artists. One of the artists recently returned to this country and took a prize at the Chicago Art Institute on a painting of a degenerate young man and two half-clad, night-club

women, with drinks on the table in front of them. That is what he is suggesting people to do. I do not care how beautifully his picture was painted, that man never weighed carefully what he was going to say through his medium.

Art has been the handmaid of belief since the very earliest times. Primitive man on this very continent long before the white man came believed in the Great Spirit. The American Indians carved for themselves a totem pole; in India, men made for themselves a Buddha; and in Central Africa, a grotesque image. As Dhan Gopal Mukerji says, it is not the idol we worship, it is the spirit which the idol invokes when we look upon it.

When we bring up that word religion, there are apt to be many differences of opinion, and we hesitate to use it, because we think of it as a belief, rather than as a way of life. Yet, no matter what we may call ourselves denominationally back of all the several forms there is the one principle which has come down to us from the beginning, the principle which gives life and by which we support life. The scientists may call it the electron; others may call it nature; and some call it God. If we must put a name to it, I like to call it the All Creative Spirit which lies dormant throughout all nature awaiting only the touch of man's hands and man's will.

The suppression and exploitation of that creative spirit both in natural resources and in mankind has sometimes led us to world-wide conflict. I believe that there is no way out of our many difficulties and problems of misunderstanding today except as we may stimulate and promote clear and unprejudiced thinking and sympathetic understanding in each individual, which are the main functions of art. But it is today, quite as in Ruskin's time when he said:

> We are always in these days wanting one man to be working and another thinking; one we call a roustabout, the other a gentleman, whereas the worker should often be thinking, and the thinker should often be working, and both should be gentlemen in the best sense. Whereas we have created a society of miserable workers and morbid thinkers.

Ralph Waldo Emerson in his essay on "Art" says:

> Art has not come to its maturity if it do not put itself abreast with the most potent influences of the world; if it is not practical and moral, if it do not stand in connection with the conscience, if it do not make the poor and uncultivated feel that it addresses them with a voice of lofty cheer. There is higher work for Art than the arts. . . . Nothing less than the creation of man and nature is its end.

How many of us are taught to believe, day after day, that art should not teach; that art should not preach, that art has nothing to

do with morality. The masterpieces of art that have come down to us through the ages—Shakespeare, Velasquez, Rembrandt—silently teach and preach today. Art which obviously teaches or preaches is apt to be an inferior kind of art, but the best art teaches and preaches to us subconsciously. The kind of art that comes before the mass of the people today on the news stand, the billboard, the movie screen, and in the newspapers is also teaching or preaching subconsciously. Men are influenced by ideas there portrayed when they do not know that they are getting them, but these ideas go through into their subconscious minds, to be called forth from time to time to influence their thought and actions.

Emerson says further that "the hand can never execute anything higher than the character can inspire." Today we have the reverse of that situation. With the machine becoming more and more automatic, what chance has one individual brain to stand up day after day before organized brains? Character is slipping, because in our leisure time we are suggesting to man what to do through an inferior kind of art.

Then Emerson goes on to say art

> is the instinct to find beauty and holiness in new and necessary facts, in the field, the roadside, in the shop and mill. Proceeding from a spiritual heart it will raise to a divine use the railroad, the insurance office, the joint-stock company; our law, our primary assemblies, our commerce, the galvanic battery, the electric jar, the prism and the chemist's retort, in which we seek now only an economical use.

If it is possible for art to raise industry and business, the joint-stock company, chemistry, and life itself to a divine use, why has not it done so? Is it not because of the way in which we have been educated? In this era of high specialization, each one of us, whether we are engineers, artists, or business men, by the very nature of our work, repeatedly doing the same thing day after day, through the competition of holding our jobs, with one incentive at the end—either money or fame—seldom realizes the relative value of his work to the work of the world, the relation of the part he is playing to the whole of life. But I believe it lies within the realm of the fine arts to point out the way.

Editor's Note—Mr. Beneker then illustrated this theme by displaying a series of pictures, many of which were portraits of workmen in the steel mills of Youngstown and Cleveland, which he himself had painted. A portfolio containing fifteen full-color reproductions of Mr. Beneker's industrial drawings, with interpretative editorials, may be obtained from the artist.

Attendance Supervisors and School Nurses

Early Stages of Emotional Control

Joseph Jastrow[1]

My purpose is the very modest one of trying to supply a background for this aspect of work, of service to the child, and one must necessarily begin with the early stages where everything is important and relatively clear. Judge Miriam Van Waters in her book, *Youth in Conflict*, said that childhood of the past generation was not so much disregarded as utterly undiscovered. The clue to the situation is apparent. Though there has been a fair number of generations, and most of them have had children, they have all been so busy bringing up children that none has had time to study them.

There have been from time to time men of brilliant minds, far ahead of their day, who have recognized the problem of childhood. There was such a genius by the name of Comenius, who discovered the child as long ago as 1637, as Froebel and his successor, Pestalozzi, did for a later generation. It was, however, that second discoverer who had a very definite effect on American education. There was a little bit of sentiment in the discovery recorded in the term "kindergarten," a garden of children.

On the other hand, we recognize that the mere discovery of childhood is not enough. What we really have discovered is that the child is an authentic contribution to psychology; and there is more psychology in the nursery than in the psychological laboratory. We must go to the nursery, not in the mood of enforcing, but in the humble mood of learning and observing how the child is made by nature before he is interfered with by man.

Speaking, as I am, quite definitely, of the early stages of emotional control, I must indicate why there is such a problem. The type of approach must be naturalistic. Our first duty is to find out how nature has arranged matters. We have to accept human nature and in our acceptance we must go as far as we can in understanding the conditions under which childish behavior occurs. There is first the physiological condition. We can get a glimpse by recognizing that the child lives dominantly on the early levels of control.

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Whatever is true of the child is not only authentic, but it is fundamental and early—early in the history of the race, in the history of the animal form, early in the much larger concept of the origin of the human behavior. Such a book as that of Professor Payton on *Human Behavior* presents this point of view. We must consider the type of human behavior that was established in those long ago periods, when man was just beginning to emerge as man. We know that we are today trying to live an entirely different life but with the same equipment. We have not a bit better brain, if we can measure it by the skull, than the Cro-magnon race had—one of the superior prehistoric races—but we are trying to put that brain to an entirely different use. As far as we can interpret the purpose of nature, it is to have the brain and its functions grow up under conditions entirely different from those of our life, in which such a thing as a school was unknown. In prehistoric time, there was only the school of life and probably that is the only school worth anything.

Nature's psychology is written in our physiology. The infant is living largely on nature's instinctive level. Life consists of a certain cycle—the energy cycle. We give out energy, there must be rest and sleep, and we are ready to resume the cycle. In that book of education which has never been written, the first chapter will be entitled "Sleep." The infant needs twenty hours of sleep with four hours of intermittent wakefulness. This program the adult has to convert into an eight-hour sleeping period, with eight hours of recreation, and eight hours of work. That is what growing up means. All we expect of a good infant is to be a good sleeper. This points to sleep as by far the most important thing. Many persons today are ambitious to curtail sleep and turn night into day; that may be a fine ambition, but it is not the way nature intended it. There ought to be a rule never to wake a person up, because there is never anything going on in the world of sufficient importance to wake him up for. He is far better occupied in sleeping, at least in recuperating, so he will have the vigor to do what is needed when he does wake up. A tired world where the people are restive is a most unfortunate world to live in.

The second cycle is "Food." The next thing you expect of a good infant is that it should be a good feeder. Now, the question of food is too large a one to cover. You are sufficiently aware of its importance and the fact that food conditions largely determine mood and that emotional control is closely connected with the digestive tract. The brilliant example appears, as usual, in the nursery. You find an infant crying in distress and bewailing the misery of this world; after eight ounces of food he is a mine of optimism. Such

is the relation between food and mood. It is very close and continues to be so. You know what the result would be if you passed a subscription paper before dinner.

Still more intimately, however, we get the evidences of what emotional control depends upon, in those collateral systems which are so indicative and sensitive. First of all, respiration! Life begins in the first breath and ends with the last. There is a psychology of respiration. In respiration there are always two things you must have in mind, how it is represented and how it is controlled. Respiration is represented in your behavior. If you are excited, you cannot get your breath—you may be breathless with fear.

Circulation is even more interesting because it is in a way a wider factor. Nature has written the indices of emotional control largely in the circulatory system. That is the reason why the heart is made the seat of the emotions. The heart is no more the seat of the emotions than the stomach, and from the point of view of masculine psychology, the latter may even be nearer. We call the heart the seat of the emotions, because we feel the rapid heartbeat when we are excited.

It is at the other end of the circulatory system, under the finer capillaries, that we have the visible evidence of circulation. When you get excited the blood rushes to your head; and you recognize the flush of excitement and anger, because those capillaries have elastic walls and they open and let the blood in. Contrariwise, when you are frightened, the capillaries simply shut down, and you say you "turn as pale as a ghost." There is a special mechanism that shows how difficult it is to control the physical signs of emotion, namely, blushing which comes from embarrassment. Someone once said that man is the only animal that can blush, and the cynic has added that man is the only animal that has anything to blush for.

In regard to digestion I shall say a little more, as this introduces the most important determiners of the condition of emotional control, which depends mainly on the secretions. As you know we now recognize two orders of secretions. There are the ordinary glands which send their secretions outward, and the glands which send their secretions into the blood and brain—the glands of internal secretion. The lachrymal glands provide an interesting bit of psychology. Why, when we feel sorry, we should let a little salt water trickle down our face, is not easy to say. It is not a highly intellectual performance, to say the least, yet that is the way we are built. Any sympathetic sentiment will bring out tears. You will notice in the motion-picture houses that there are more tears shed over the sentimental scenes than over the tragic scenes. In the same expression appears emotional

control. You know that when a child breaks into tears that something is the matter, and the possibility of cultivating that art to induce sympathy is not impossible.

Thus appear the sidelights in nature's writing which show upon what emotional control depends. Another part of the story appears in the salivary glands. These are used to keep the throat from getting dry. That fact was used ages ago by the Chinese as a test of a possible thief. Those suspected were each asked to take a mouthful of dry rice. The one whose mouth was dry and could not swallow was supposed to be the guilty one. He may have been the most nervous one. Of similar order are the sweat glands and the whole apparatus of perspiration. We seem to have two different ways of showing excitement. We either "get hot-headed" or "get cold feet"—at either end of our anatomy. Your intimate psychology appears all over the body, and appears in its early manifestations.

The glands of internal secretion, however, open a new chapter in the condition of behavior. Of these the miracle gland is the thyroid, miracle so-called because it is next to a miracle that you can take the Cretins—dwarfed, stunted, feeble-minded—and feed them with the extract from the thyroid gland of a sheep, and they become much more nearly normal. There are cases, especially of girls in their teens, who become listless at home and do nothing at school; they lack energy and they sleep overlong and seem not fully awake; the cause is a deficient thyroid condition. A little extract of thyroid may relieve it.

There are glands in infancy which prevent the child from growing too fast. Sometimes this dominant gland overacts, but this is very rare, and then you have dwarfs. And so we go on. Some of you may have read an interesting book, *Glands Regulating Personality*. It goes beyond the evidence, far beyond it, but it is suggestive. The writer even goes so far as to suggest that the administration of Harding was an "adrenal" one, while the administration of Wilson was "pituitary." That is far-fetched, but the glands are an important factor in regulating personality, and that factor is far stronger in the early stages of childhood when the balance of those glands is just being established.

What kind of a person you are going to become later in life depends on glandular balance, on which particular gland reaches domination. The dominance of glands varies with age, at one age one gland is dominating and then another. The distinctive period of life comes at the point at which the sex glands begin to assert their dominance; life after that cannot possibly be the same as before.

Such are the processes of nature in establishing emotional control. The reason for all this complicated arrangement is that we have not one nervous system but two. The nervous system we all know about is the central one—contents of the skull, the brain, and its continuation down the whole of the spinal column, the spinal cord. Our behavior is largely determined by the central nervous system, but parallel with the spinal cord yet outside of it is another nervous system which in the olden days was called the sympathetic nervous system, now more generally called the autonomic or self-regulating nervous system. This is the primary nervous system; in terms of evolution it is millions of years older than the central nervous system. All the important and vital functions are associated with the activities of the autonomic nervous system. And at every part it has cross-connections with the central nervous system so that even though glands are not directly acted upon at all the autonomic nervous system affects the central nervous system so that action is restrained. By this mechanism you can either let the action go on or hold it back. That is the business of the central nervous system. All the vital functions—breathing, respiration, digestion—all these expressions have an emotional bearing. They are all closely connected with the autonomic functions; the autonomic system is far more active in early childhood.

We are primarily interested in the central nervous system which controls a much larger share of behavior. In general, we say that its function is to regulate intelligence, but not intelligence only as that by which we solve our problems—what to do and how to do it. That in nature's scheme is the second use of intelligence. The first use is to control the emotions. Now, since the high activity of the autonomic nervous system induces a definitely emotional state, we must recognize that this is the problem of childhood. Man is more an emotional than a rational animal, and the first way he can show his rationality is by controlling the emotions. Intelligence tests are important, but emotional tests are much more so, for your emotional age is what you live on.

We naturally pass at this stage to the question not of emotion but of emotions, and mainly, the emotions of normal people. We must also consider the disturbing emotions because they require attention. The two great disturbing, destructive emotions are fear and anger. The child being in a sensitive nervous condition is tremendously subject to disturbing emotions, particularly fear. How few children escape night terrors! They wake up out of their sleep when they are supposed to be resting, in absolute panic. How easy it is to frighten a child. The important thing is to keep it unafraid. What

the child wants first of all is a sense of security—safety first. When that is established, it feels secure and safe and shielded. We all have that feeling and so do not place a bed out in the middle of the floor, and in entering a street car we sit on a corner seat to be safe from our neighbor at least on one side. You recognize the universal urge for safety. Well, you cannot feel safe when you are afraid, hence, the fear of anything a bit strange. A stranger picks up the baby and it cries, though much of this depends on how it is handled. We thus recognize that the question of security is important; fear is the important emotion to avoid. It sets a definite problem to lay the foundations for later security. This means avoiding initial fear responses. Such applies to the child's first day at school. The little child is frightened by a new environment. When a mother brings her child to school on the first day, it might be desirable that she remain, and gradually reduce the period of her stay until the child makes the adjustment.

The situation for anger is quite different. No child ever had to be taught to be angry. A special variety of it is called tantrums, at which even the infant is expert. It is as easy to overcome the anger of an aggressive child as it is the fears of a recessive one. The sign we often put on "zoos," "Don't tease the animals," might be rephrased for the schoolhouse.

In the child from the third to the seventh year, particularly, there is just one thing more important than anything else, a growing control of its fears and a growing control of its anger. Similarly with food, some children have to be urged to eat and others to stop. The problem is to get those children to eat in a normal way and to have normal fears and angers. One child is so aggressive and so active that the problem is to lower that aggressiveness and reduce leadership and the tendency to bully and tease; the other child is timid and shy and the problem is to increase that child's aggressiveness and make him feel at ease with others and to avoid the feeling of inferiority.

Emotional control is an individual problem. The problem shifts with the ages. The earliest age is the impulsive age, next the age of emotions, then of reason. Infancy is an age of motor excitability. In a later stage the same traits make the child fidgety and restless and without patience. Very young children cannot sit still for more than fifteen minutes. Their nervous systems are not yet under sufficient control. Observe the first attempts at writing of a child; he crosses his legs, protrudes his tongue, and then the hand painfully tries to trace a few letters. He cannot direct the motor impulses to his hand alone. This follows the order of specialization in the motor centers.

Similarly, the child gets its early motor education through its feet, and the human feet remain easily educable as in dancing. It is more difficult to train the hand and the voice, much so, because of the finer muscles of the fingers and those of the throat. Baby talk is lack of co-ordination. The life of the child is full of tensions. Children take their own form of relieving such tension, such as sucking their fingers. A similar shift in the nervous control may be shown in sleep. A child goes to bed when tired. It falls to sleep instantly.

Later on we cannot sleep in a strange bed or on the train, partly because it is going and next because it is stopping. We have something on our mind and we cannot sleep. Anything will disturb sleep, because the whole balance has changed. Thus, we realize that in all of our functions, whether of speech, of sleep, or motor tension, the balance has changed and that such is the course of emotional control.

The nursery school teaches control. The children learn to control breathing, to relax, to contract, to co-ordinate. A child lets itself go easily and falls with little fear. The adult holds back. Education is a series of controls of impulses first, of emotions next, and of reason last. We want to make children reasonable in the sense of controlling their emotions as early as possible, and reflection enters early. The whole course of discipline indicates that early discipline must be in terms of regulating impulse; the next stage of impulse is habit. In the infant stage muscular habits are formed and later emotional habits—particularly, let us say, the habits of patience. That is likewise reducing tensions. You may think that when you are teaching a child the first problems in arithmetic you are teaching him arithmetic, but what arithmetic he learns will not hurt him, for the real problem you are teaching him is to have enough patience to do the task. Patience is far more important than the multiplication table. The values are always emotional first and intellectual second. Similarly, physical punishments give way to emotional punishments, these to reproof in terms of reason. Reason is the main thing, and it should be introduced as early as possible, with doses of reflection and reasons for behavior.

Duties of the School Nurse

Louise Kuck Tooker [1]

The school medical and nursing program in Cincinnati is a function of the Board of Health working in co-operation and harmony with the Board of Education. The school physicians and

[1] Superintendent of Nurses, Cincinnati Department of Health.

school nurses are under the direct control and responsible to the Health Commissioner, while the visiting teachers and attendance officers are employed by the Board of Education. This arrangement means that there must be a close working relationship and understanding between the executives of these branches.

I shall not tell about the work of the attendance officers or visiting teachers, but I wish to outline briefly the function of the public-health nurse within the school system. Her work was begun as a result of the necessity to control communicable disease, and later the correction of physical defects was added. Now she has a part in the program which aims toward a vigorous healthy childhood, which is to be realized by the adoption of health standards and habits.

Even in the basic and fundamental duty of the school medical department, the control of communicable diseases, we need the co-operation of principals, teachers, attendance officers, and visiting teachers if we are to perform our service with maximum efficiency. Prompt reporting of the child who is out of school because of illness but who has no physician may result in the discovery of an initial case of communicable disease, one which might have been the forerunner of many others. The teacher, too, renders inestimable aid when she promptly notices symptoms of illness and sends the child to the physician or nurse. The Health Commissioner sends a daily list of reported cases of communicable diseases to every principal, who in turn notifies the teachers, with the result that additional caution is exercised in regard to children who might have been in contact with the infected ones.

Routine physical examination of school children occupies an important place in the health supervision. Where the nurse works alone this can only take the form of an inspection with the findings noted as symptoms and referred back to the family physician. Where the nurse and doctor work together, the physician takes the responsibility for the examination and detection of physical defects; and the nurse assumes the work of follow-up for correction. In Cincinnati we examine all children in the kindergarten, first, third, and fifth grades; those in any grade who are ten percent or more underweight; and, if possible, all the pupils in the eighth grade before they leave school. The examinations are limited to these grades because of the lack of sufficient personnel to extend our work further. We do, however, examine many additional children who for some specific reason are referred to us by the visiting teacher, attendance officer, or classroom teacher.

As a result of the foresight and enterprise of the director of the sight-saving classes there has been instituted a program, which has been decidedly helpful in reducing the amount of eye-strain among Cincinnati school children. A teacher appointed by the principal of each school is the so-called "eye-representative"; she is interested in the natural and artificial lighting of the schoolrooms, the seating arrangement, condition of blackboards, all of the things which help to prevent eye-strain. She also prepares for the school doctor a list of the children who have glasses, those whom the teachers think need glasses, and the reading failures.

This year one nurse is giving her entire time to the testing of the hearing of school children and procuring for those who have subnormal hearing an examination by an otologist. Where the correction of a defect may improve the condition, steps are taken to have it done at once, and where the prognosis is unfavorable, recommendation is made to have the child placed in a lip-reading class.

In her attempt to adjust the problem child to school life and to its social environment, the visiting teacher brings to our attention children whose defects have not been noted or perhaps with whom we have been unable to secure co-operation. Through the combined efforts of visiting teachers, attendance officer, and nurse, defects with which the nurse has struggled unsuccessfully for years are now being corrected. To bring about the teamwork so much to be desired between these important officers in school life, they should all work in proximity in the school.

A system of medical and social records should be established and kept where they are available to those who need to use them, but kept from the idly curious. A policy of where the nurse's work ends and that of the visiting teacher begins should be established in order to avoid duplication or conflict of effort. However, the nurse should always be willing to assist in cases of social adjustment, and the visiting teacher or attendant officer should lend all the support possible in carrying out the medical program.

It has been said that the most conspicuous cause of lack of success in health education has been the failure of the home to co-operate. It is easy to see that the power to put knowledge into practice and through practice to establish good habits is limited in the face of parental indifference or antagonism. The nurse as a visitor may well carry to the home the practical applications of what the teacher has presented in her health lessons. On the other hand, the teacher must reiterate in a modified way the story which the physician and nurse have been telling in their private interviews with mother and

child in the office. The time has passed when we may think of the teacher's work, the nurse's, the visiting teacher's, or attendance officer's work as entities. We must think of them as joint endeavors and more than a school program, for we must consider them in their relationship to the health and welfare of the entire community.

The Position of the School in Social Service

Jane F. Culbert[1]

All who are engaged in work for children, whether in the social or educational field, regard the public school as the greatest child-welfare agency. The basis of this belief is readily understood as soon as one reviews, even in a general way, what is done by the modern school for child health, the care or training of mentally or physically handicapped children, recreation, vocational guidance, and parental education through the parent-teacher organizations. Whatever their limitations and however short they may fall of the expectations of social workers or of the ideals of socially minded superintendents, the schools have the opportunity to accomplish and undoubtedly do accomplish more along preventive and constructive lines for child welfare than any other one institution or than all our child-welfare agencies together.

The growing recognition of the school as an ally or an effective channel through which to work out social programs may be seen in the way in which various organizations increasingly turn to the school for co-operation. The Junior Red Cross and thrift, child-health, and recreational organizations within recent years have all developed their programs in and through the schools. More recent still, concentrated efforts for the prevention of delinquency are directed toward the school as the strategic point of attack.

The obligation of the school to co-operate in such enterprises and to take the lead has become evident through scientific studies in the field of mental hygiene and in delinquency. Such studies as those made some years ago by Dr. Bernard Glueck of the life histories of prisoners in Sing Sing showed that these men almost invariably gave indication during their school years that something was wrong—that they were not developing as other children either mentally, or physically, or socially. A danger signal had been put up; sometimes it was noted by the school but not heeded; sometimes it was noted but its significance not understood. But

[1] Executive Secretary, National Committee on Visiting Teachers, New York.

it had been put up. Dr. William Healy's studies of unadjusted children at the Chicago Institute of Juvenile Research and at the Judge Baker Foundation in Boston have shown that school dissatisfactions are important factors and cannot be disregarded with impunity. These and other eminent psychiatrists tell us that the beginning not only of delinquency but of most mental diseases and nervous disorders are traced to childhood experiences.

The answer to present problems of delinquency and dereliction is "re-education"—a word which appears frequently in the current literature of social case-work delinquency and mental hygiene. The use of this word points quite obviously to the fact that if re-education is necessary for the client of the social organization or for the patient in the sanitorium for mental disorders, something must have been wrong or lacking or inadequate in his education in the first place. What does this mean to the school? It means that the school of today must see to it that the type of education which it affords will not necessitate re-education.

To put the matter in another way, there are in the schools of this country today all the boys and girls who, within the next five or ten years, will come before the juvenile courts. There are in classes now every boy and girl who, within ten or fifteen years, will be sent to the reformatories, as well as every one who, in the succeeding decades, will have a prison record. Further, the schools now have in charge practically every one of the boys and girls who are to fill the sanitoria and hospitals for mental patients as well as those who are to become the industrially inefficient and dependent. To discover all of these future derelicts and sufferers or to prevent their future failures and difficulties would be a superhuman task. But to discover as many as possible by being alert to the symptoms that are already known through the researches in the field of delinquency and mental hygiene and then to prevent and correct wrong trends in so far as is possible by an education that is adapted to the needs of the individual child—this represents the obligation that rests upon the school.

The school's opportunity for social service is unique. It is the one organization that enrolls practically all children. Moreover, it has them under its supervision for a considerable period. It comes in contact with them while they are young and therefore has the opportunity for early discovery of difficulty. Not only does it reach all the children but it has a connection with all the parents—the school gives access to Everyman's child and thence to Everyman. Then, too, it has the confidence of the parents; because the school belongs to the people and there is no stigma of charity or social discrimination

attached to anything it attempts. Any social worker or nutrition worker, for example, who has previously visited homes from an agency or a clinic as a base realizes by contrast how much more natural is the approach from the school because of this confidence on the part of parents and their feeling that the school is their own institution. From the point of view of treatment, too, the school offers many advantages. It provides a marvelous social laboratory in which the child's reactions may be studied, his progress noted, and in which educational and social conditions may be arranged and rearranged to meet his changing needs.

Space permits only the briefest answer to the question: how shall the school meet its obligations as a social institution and make the most of its unique opportunity? First, school officials and social workers must get together to fill the gaps which now exist between the school and the home and the school and the social agencies. Each should be familiar with the work of the other group, with its aims, methods, and the difficulties involved, both as an organization and with reference to their respective work for an individual child or family. There must be closer co-operation and more frequent conferences between the school workers and the social agencies. Each person, social worker or teacher, who is impressed with the value of teamwork between the two, should see to it that such questions as the following can be answered in the affirmative: Have the principals asked the family workers, the probation officer, the children's clinic workers to discuss at a teachers' meeting social problems as they see them and the ways in which teachers and social workers can cooperate more effectively on children's problems? Is a principal or a representative of the school a member of the case committee of the family society? Has the principal of our neighborhood school ever been invited to visit the settlement? Have principals been asked to visit the children's court or the children's home? Has the superintendent ever told the social workers how they may help the school?

Second, the school itself, realizing that in present adjustment of children's difficulties lies prevention of more serious later difficulties, must arrive at a better understanding of the causes of children's problems and a more scientific treatment of them. Social workers, mental hygiene experts, and leaders in education have come to realize that the school can fulfill its obligations only when teachers have as part of their equipment an understanding of behaviour—their own as well as the child's—an ability to see the child as an individual, as well as insight into the emotional and social factors that enter into the making and the adjusting of the problem child.

A beginning has been made in a number of teachers' colleges by introducing courses on behaviour problems of children, based on actual clinical material and case histories of school children referred to visiting teachers in the course of their work. These courses are designed to give teachers an understanding of the cause of children's problems and their development and of the role which the school can play in adjusting or preventing them. As Dean Edith Abbott of the Graduate School of Social Service Administration, University of Chicago, has said, "The school teachers of the United States, if they can be socialized, can accomplish more to prevent delinquency than all the social workers together."

However, the teacher can seldom do this work alone, burdened as she is with the responsibilities for group instruction. The school staff should be provided with one member whose chief concern is the individual, especially the individual who is showing signs of educational, social, or emotional maladjustment. Just as the school nurse was added to the school at first to prevent illness and later, increasingly, to develop constructive health programs, so in recent years the visiting teacher has been appointed by school boards to do intensive case work with individual children who are showing signs of distress and to co-operate with the school workers in building up a social program, making possible better adjustments of individual problems. This specialist should have training and experience in social case work and in teaching and should be familiar with the psychiatric approach to children's problems.

What shall be the objective of this more scientific approach to children's problems? Just as the school takes the child as it finds him and through its nurse and school doctor builds up his physical condition, correcting his weaknesses, directing him to proper medical services, providing rest hours, special diet, open-air classes, and the like, so now the school must study especially the so-called problem child as an individual, must be willing to build on the character foundation he has, however weak, and provide such care and training as will strengthen him where he is weak and build up compensatory interests and ambitions. It must, in the light of modern social, psychological, and psychiatric findings, learn to see each pupil as a whole child and plan accordingly to reinforce his personality and perhaps to compensate for defects in his make-up—physical, mental, or emotional. Just as we regard the school's job on the health side as only begun when it has learned, for instance, that an anæmic child with a history of rickets comes from a tubercular home, so the school must realize that its real job on the mental and emotional side has just

commenced when it has learned the essential facts, discouraging as some of them may be, about a child's personality and relations with the people with whom he comes in contact.

In the case of the anæmic child, the school immediately sets out to bring social and health and educational agencies to work in his interest. Just as important, on the other hand, is the case of Ruth, aged eleven, reported to the visiting teacher as being repressed, obsequious, calculating, and deceitful, and doing poor school work. The school finds that Ruth had been shifted at seven from her cousin's home, where she was not wanted, to an orphanage, and thence at eight to the home of a semi-pauperized maternal aunt who uses the child as an excuse for squeezing more and more money out of the father's relatives, from whom she practically taught the child to beg.

Academic achievement alone will do little to solve Ruth's life problem, unless some change in her home life and considerable effort to overcome previous character-undermining influences accompany it. The school will realize that even after the proper adjustments have been made in her home, the securing of teamwork between teacher, vocational counsellor, visiting teacher, Sunday school worker, Girl Scout leader, and suitable relatives must be part of the school's job if it is going to provide for Ruth not just "good schooling" but the sort of education that will reinforce her life at its weak points, that will develop her potentialities for self-dependence, and that will lessen the chances for the need for re-education in the future. Straightforwardness, self-dependence, generosity, trust in people, and trustworthiness must be developed in every possible way through the give and take of games and group activities, through social contacts, and solid friendships with frank and generous comrades, whose standards of honor and directness may gradually modify her own.

Through the ever closer co-operation of school and social workers, then, and through the increasing interest, understanding, and effort of school workers to adjust the problems of individual children in relation to all the factors in their lives and to keep abreast of modern educational philosophy and scientific investigations, the school can creditably discharge its obligations and make the most of its unique opportunities as the foremost public institution for the guidance and guardianship of children.

Biological Science

Botany Serving the Public

C. Stuart Gager[1]

The Brooklyn Botanic Garden was organized for the advancement and diffusion of a knowledge and love of plants. "The advancement of botanical science and knowledge, and the prosecution of original researches therein and in kindred subjects" is stated as one of the objects in the act of the New York State Legislature providing for the establishment of the Garden. In the agreement between the City of New York and the Garden authorities it is also stated that the activities of the Garden shall include

> the giving of instruction in botany to the residents of the City of New York; that it shall afford facilities to teachers and students in the public or private schools of the city, and to other residents of the city, for the study of botany . . . and for that purpose to permit teachers in the schools of the city . . . to bring their students to the Botanic Garden,

where they may be instructed by their own teachers or by members of the Garden staff, or by instructors especially employed for such purpose. In harmony with these provisions an educational, as well as a research, program was planned at the beginning, and the two lines of work have been carried out *pari passu*.

A botanic garden serves the public merely by maintaining a beautiful garden, open free to all daily. Beauty is one of the most important civic assets of any community, and the endeavor has been made to make the Brooklyn Botanic Garden the most beautiful spot in the city. But a botanic garden must be more than beautiful; it must be educational in other ways as well. This is one important feature which differentiates a botanic garden from a mere park. The herbaceous plants, trees, and shrubs in a botanic garden are arranged in accordance with one or more botanical principles—relationship to each other, relation to the environment, geographical distribution, etc.—and carefully labeled, so that one going through the garden may secure information about plant life. Also, in connection with the labeled collections in plantations and greenhouses, various educational and scientific activities are organized, based upon the labeled collections and intended to enhance their educational uses.

[1] Director, Brooklyn Botanic Garden.

We are concerned here only with the educational work, which may be as extensive as ideals may dictate and resources permit. As an illustration, the educational work of the Brooklyn Botanic Garden may be briefly summarized:

1. The Botanic Garden as a whole—
   Plantations (labeled collections)
   Conservatories (labeled collections)
   Docentry (teaching guides)
   Bureau of information (entire staff)
   Guide books
2. Publicity service—
   Daily papers
   Professional journals
   Libraries and schools (posters and bulletins)
   Street cars and subways
   Broadcasting
   Souvenir post cards
3. Classes
   For adults (teachers, special groups, general public)
   For children (Botanic Garden classes, classes from schools, groups from institutions)
4. Lectures, addresses, papers—
   At the Garden
   Extra-mural
   Broadcasting
5. Motion pictures on plant life
6. Field trips
7. Seed distribution—
   Penny packets to children
   International seed exchange with other botanic gardens
8. Living plant distribution—
   To schools
   Duplicates to libraries and hospitals
   Surplus to members
9. Loan collections—
   Lantern slides
   Plant preparations
10. Petri dish service—
    To schools
11. Library service
12. Educational exhibits—
    At the Garden
    Extra-mural
13. Commercial and trade services—

Growers (nurserymen, etc.)
Manufacturers (textile designs, sources and varieties of fibres, etc.)
Dealers
Advertising agencies (plants and plant parts to illustrate advertising)
Publishers

14. Editorial services—
Botanic garden publications (7)
Co-operation

15. Label department—
Labels, bulletin, signs

16. Co-operation with other institutions—
Public organizations
Private organizations

The Plantations have been referred to as "gardens within a garden," for they comprise about twelve distinct sections or gardens. In the General Systematic Section, the largest of all, herbaceous and woody plants—trees and shrubs—mostly from outside the local flora area, are arranged according to their botanical affinities in orders and families, an order being a group of closely related families. Provision is made for the lower forms, cryptogams (algae, fungi, liverworts, and mosses), followed by the gymnosperms, and the latter by the so-called flowering plants or angiosperms. In this section there are three features not common in botanic gardens.

Instead of the usual arrangement of herbaceous garden, fruticetum for shrubs, and arboretum, the herbaceous plants in beds, are surrounded by the trees and shrubs belonging to the same order as the herbs. The educational advantage of this is obvious. The planting plan for each family or order also makes special provision for illustrating how the plants in the given order may be used for decorative planting and landscape effect. In connection with the wild species there are displayed horticultural varieties derived from those species by artificial breeding. For example, in the lily family there are shown not only the wild species of tulip but also specimens of the various horticultural groups (cottage, Darwin, etc.) and varieties.

The Native Wild Flower Garden (local flora section) contains only plants that grow without cultivation within a radius of approximately one hundred miles of Brooklyn.

The Children's Garden contains individual plots for over one hundred fifty boys and girls. This garden is conducted primarily for its educational results; the "crops" are considered more in the nature of a by-product. The contents of these individual "gardens" are

determined by the instructors, and it was found educationally advantageous to make a small charge to the children—25 cents for the smaller plots and 50 cents for the larger. In return the Botanic Garden supplies land, seed, and instruction, and the crop belongs to the children. In preparation for the garden work and throughout the season, instruction is given in such topics as the structure and germination of seeds, other methods of plant propagation, the soil, what the roots are for and how they function, the function of leaves and flowers, and insect and fungus pests and how to combat them.

The Japanese Garden is visited in large numbers by the general public, and teachers bring to it many classes, not only of nature study but also of geography when Japan is being studied. The Rock Garden affords an opportunity to study and enjoy saxatile and alpine forms. Over six hundred species are represented. The Ecological Garden illustrates the relation of plants to various factors of environment—water, light, gravity, change of season, soil bacteria, insects, seed dispersal, parasitism, and other relations.

The Water Gardens, Iris, and Rose Gardens and the various horticultural collections previously mentioned are for the most part self-explanatory. It may be noted here that in the Rose Garden the horticultural varieties of roses are arranged in chronological sequence so as to show the history of the horticultural roses.

The Conservatories as usual contain tender and tropical forms, and special emphasis is placed on economic plants. Here classes from the schools may see growing such plants as tea, coffee, chocolate, coconut, banana, pepper, rubber, bamboo, pineapple, and numerous other tropical fruits; fiber plants such as manila, hemp, and sisal; and vanilla.

A System of Docentry is provided both for classes from the schools and for the general public. The Bureau of Information includes the entire staff. Inquiries concerning every conceivable aspect of plant life are constantly being received from all parts of the United States and from foreign countries. Guide Books are being prepared and published on the Garden as a whole and on the various plantations and special gardens or collections. The Publicity Service aims to disseminate information about the Botanic Garden and also about plant life in general. The department of public instruction maintains a feature news service, "to promote public interest in plants," and a special publicity agent sends regular news releases to the Associated Press and to local papers.

In the formal instruction more emphasis is placed on classes than on isolated lectures. There are courses for the general public, for

teachers, and for special groups, such as nurses-training classes. The latter is quite a new type of work, where students in the nurses-training classes of nearby hospitals come for instruction in medicinal plants, the care of plants and cut flowers in the sick room, and other topics related to the calling of a professional nurse. Much of this instruction is given out of doors in the plantations, so that the nurses may have the advantage of an outing as well as of the formal instruction.

There is not space available to treat in detail of each of the lines of work already indicated. In general, it may be said that public response to such a program of public service is reflected in the general attendance, which has increased from about ten thousand a year in 1911 when the Garden was first opened to the public to more than one million in 1928. Interest is shown also by the fact that in 1928 teachers brought over fifty-four thousand pupils to the Garden for instruction in plantations, conservatories, and classrooms.

During the past year the Brooklyn Botanic Garden installed 29 exhibits at the Garden and elsewhere, which were viewed by 90,000 visitors. It supplied 3,800 teachers with living plants, plant parts, and other study material in quantity sufficient for the instruction of over 156,000 pupils. It held conferences with over 1,000 teachers concerning problems of teaching biology and nature-study; distributed 560,000 packets of seeds to 177,000 pupils for planting in schools and home gardens; supplied over 3,200 petri dishes with sterilized culture media for the study of bacteria in the high schools. Members of staff gave 87 addresses, lectures, and talks outside the Garden, with a total attendance of over 31,000. Over 6,000 adults and children registered in 37 courses of instruction during 1928.

In addition to these services, the Botanic Garden publishes seven periodicals, four of which are wholly and two partially edited by members of the Garden Staff, and botanical research is carried on in plant pathology, genetics, forest pathology, ecology, plant physiology, and systematic botany. The Brooklyn Botanic Garden is financed in part (52 percent in 1928) by private funds and in part (48 percent) by public funds. In consideration of support from the tax budget of the city, it is appropriate that the Garden should render as large a service as possible to the public.

Botanical science is the cornerstone of modern civilization, commerce, and wealth. Civilization really began when men ceased to depend upon hunting and wild fruits for food and began to plant seeds. This made it necessary to remain resident in one locality long enough to carry through all the operations from seedtime to harvest.

For food, clothing, medicines, all beverages other than water, dwellings, and scenic beauty mankind is dependent upon plant life. No subject can yield more valuable returns as an educational discipline; no line of research and education merits more substantial and generous public support than botanical science in all of its various aspects.

Adjusting Biology to the High-School Student

W. M. Barrows[1]

The speaker holds that biology teaching, which usually reflects the tendencies of the past ten to twenty years, adjusts itself to the needs of the student slowly. The path has lead through classification, anatomy, and evolution to encyclopedic or topical courses with no underlying principle except perhaps the name of civic or applied biology. Some teachers have shown their individuality by reorganizing the material to bring order and system into their schedules. During the last ten years, due to lack of time and facilities, the laboratory work has in many places degenerated to such an extent that the textbook holds the primary place. This is unfortunate, since the informational or factual side is emphasized and the student gets little contact with the organisms themselves and has little chance to carry out experiments of the problem type, which are in themselves stimulating and approach most nearly to the problem situations which the student will have to meet in his post-school days.

The speaker advocates the teaching of principles which are common to the structure and behavior of all organisms, with demonstrations and experiments in which common and interesting organisms figure. The sequence of topics should be such that the principles which are fundamental and which will figure in the later work come first. In general, the attention should center on the small or local elements first, and the horizon should gradually widen to include, toward the end, such concepts as ecology and social behavior. The high-school student of today is surprisingly interested in social problems, for example, eugenics. His interest seems to extend forward, not backward.

Biology is in a position now to present laboratory exercises in which the results of experiments cannot only be predicted but in which in many cases they can be quantitatively predicted. The inclusion of such experiments should engender respect for the subject akin to that now accorded to physics and chemistry.

[1] Ohio State University.

City Superintendents

Professionalizing the Superintendency

William John Cooper [1]

The school superintendency, like many other American institutions, represents society's response to a felt need. A century ago there were no school superintendents, for none were needed. Our first common schools had little responsibility other than making people literate. There was little or no school property, the equipment to be purchased and maintained was practically nil. Teachers were either students preparing for other callings or itinerants. In either case the pay was largely in the form of room and meals. Such institutions could be readily managed by members of a school committee in hours not required for the pursuit of regular vocations.

After 1800, however, conditions began to change. The change since 1850 has been accelerated. The industrialization and consequent urbanization of American life brought new tasks to the schools. Business problems of first magnitude appeared. Complicated questions of relationship between local and State governments arose. Technical problems in educational procedure became numerous and complex. Under such conditions the members of no school board had either time or ability to cope with the situation. In evidence of this I submit a comment by Horace Mann on the creation of a superintendency in Springfield, Massachusetts, in 1840:

> In that town, as in a considerable number of others in the State, the schools are so numerous, and their terms so long, that if one person were to visit a school each working day in the year, the number of days would be too few to complete the circuit of visitations as required by law. [2]

Similar testimony was given by Superintendent Aaron Gove, of Denver, in 1900. Addressing the Department of Superintendence on the topic, "The Trail of the City Superintendent," Mr. Gove said:

> As the school committee—the name of the body elected to take the direct oversight of common schools in New England—was changed in character, because the people seemed to demand business men as well as

[1] United States Commissioner of Education.

[2] Mann, Horace. *Fourth Annual Report of the Board of Education in Massachusetts*, January, 1841. p. 80.

ministers for counsel and direction, the duties of the committee became quite too heavy for active business men to perform; besides, the fact that amateurs, chronic reformers, and men of leisure lacked efficiency was apparent then as now. Out of this came the demand for expert supervisors. [3]

Under such conditions was the city superintendency born. It appeared in Buffalo in 1837; in Louisville, soon after; and in Providence, in 1839. By 1870 there were twenty-nine cities with superintendents. At this date the office of county superintendent, after a generation of evolution, was becoming quite general in most of the States, but only thirteen States had established the office of State superintendent.[4]

On February 1, 1929, the mailing lists of the United States Bureau of Education contained the names of 56 state (including territorial) superintendents, 3,143 county superintendents, 286 rural-school supervisors, and 14,858 city and district superintendents —a grand total of 18,343. Were we to include assistants we could readily claim twenty thousand persons engaged in administering and supervising public schools in this country—all a development of approximately sixty years.

Does this calling bear the earmarks of a profession? How can we professionalize it? This is the problem before us for consideration. Let us inquire, first of all, into the nature of the tasks which men and women engaged in this work have to do. Naturally, the first superintendents were without training for their work. Success depended largely upon versatility.

Each superintendency required in its early days a sort of jack-of-all-trades. In 1900, Superintendent Gove made this observation:

> Among the 625 city superintendents today on the trail, from cities of eight thousand or more people, are men and women of all ages and colors, and of such varied antecedents as to preclude a reference to them as a profession. The practices, expenditures, customs, and environments of the respective cities that they represent compel as varied and various administrations. [5]

Before another quarter of a century had elapsed, the superintendents had perfected a splendid organization which had undertaken

[3] Gove, Aaron. "The Trail of the City Superintendent," *Proceedings of the National Education Association.* Washington, D. C.: National Education Association, 1900. pp. 214-15.

[4] Cubberley, E. P. *Public School Administration.* Boston: Houghton, Mifflin, 1923. p. 58, p. 37, and p. 59.

[5] Gove, *op. cit.*, p. 216.

some research studies. It is entirely fitting that the first of these published should be concerned with the status of the superintendent. From the First Yearbook of the Department of Superintendence are taken the following notes on various functions performed by superintendents in cities of different sizes considered from the point of view of the superintendent's power to initiate, execute, and approve:

1. Appointment of teachers. This authority ranks first among those which the superintendent initiates . . . . it ranks tenth in power to execute and twenty-second in power to approve. This makes it first among the powers performed by the superintendent, as it places the control of instruction in his hands.

2. Appointment of principals. . . . The second most frequently reported duty from the viewpoint of initiative is the appointment of principals. This ranks eleventh among powers to execute and twenty-fourth among those to approve.

3. Determination of new policies. Authority to initiate new policies ranks third among all the cities reporting, while authority to execute ranks thirteenth and authority to approve ranks twenty-seventh. In cities of over 100,000 authority to initiate ranks first, while in none of the groups of cities does it fall below fourth.

4. Dismissal of teachers, principals, and assistant superintendents. The fourth most frequently exercised power for the country as a whole is dismissal of teachers, principals, and assistant superintendents.

5. Determination of subjects in curricula. This duty stands fifth for the United States with reference to the superintendent's authority to initiate. This is one of the most important means by which instruction is controlled and advanced.

6. The purchase of instructional supplies. For the United States as a whole the sixth most frequently reported function is the authority to initiate purchases of instructional supplies. Authority to execute these functions ranks fourth, while approval ranks nineteenth.

7. Selection of textbooks. . . . ranks seventh with reference to the superintendent's power to initiate, seventh with reference to his power to execute, and twenty-third with reference to his power to approve.

8. Transfer of teachers, principals, and assistant superintendents. Authority to initiate . . . ranks as the eighth most frequently performed duty. Among powers to execute it ranks fifth, while among powers to approve it ranks thirtieth. This indicates that the authority is almost entirely in the superintendent's hands.

9. Preparation of the budget. Authority to initiate the preparation of the budget ranks ninth for all cities reporting. Authority to execute ranks twenty-third, while authority to approve ranks fifth.

10. Determination of the content of subjects. Authority to initiate the content of subjects in the curricula ranks tenth. The authority to execute ranks second and that to approve twenty-third.

11. Selection of non-educational supplies. This function ranks eleventh among those which the superintendent initiates, ninth among those which he executes, and eleventh among those which he approves.

12. Supervision of classroom instruction. Supervision of classroom instruction ranks twelfth in frequency with which the superintendent initiates, while it ranks first among those which he executes, and eighteenth among those which he approves.

This authority stands highest among those which the superintendent actually performs. It is among the five most frequently executed functions in every group of cities. [6]

It will be observed that these functions are all intimately connected with the work of teaching except possibly No. 6 and No. 11 which concern the purchase of supplies, and No. 9, the preparation of the budget, responsibilities which in larger districts may well be handled by the business office. Otherwise the superintendent's time is now largely occupied with a peculiar type of service—to wit, instructing children. Success in discharging these duties connected with school instruction requires a high degree of specialization.

Next we should inquire whether this calling permits such division of labor that a superintendent may organize his work and, as a school system grows, delegate responsibility for certain aspects of it to others. It has been said of American industrial practice that no man is assigned work which a man of less ability can do equally well in terms of the finished product. It is axiomatic also that the most important tasks should be assigned to the highest paid man. It would seem from the study on the status of the superintendent that our calling is following these dicta of the business world.

Lest some question their application to the professional world, I quote from a recent publication an incident in the practice of medicine which is generally conceded to be a professional calling. In Professor Pitkin's *The Twilight of the American Mind*, I find the following story:

A highly successful physician I know recently found himself embarrassed by an influx of patients, thanks to his growing reputation. So he proceeded to do the sensible thing. He turned himself into an institution. He rented immense offices and installed a competent staff of assistants. An X-ray man. An ophthalmologist. A diagnostician. A surgical aide. An anesthetician. Trained nurses. A telephone operator. An office secretary. A bookkeeper. And so on. The result is precisely the opposite from what certain mossbacks lugubriously forecast. Instead of deteriorat-

[6] National Education Association. "The Status of the Superintendent," *First Yearbook, Department of Superintendence*. Washington, D. C.: National Education Association, 1923. pp. 125-33 passim.

ing, his services have improved. He has learned the ancient lesson: divide and conquer! And he has also applied the hoary adage about two heads being better than one. [7]

As each school district increases in population and more workers are required to administer its affairs, the superintendent may delegate to others not merely tasks of purely clerical type, but also duties of rather highly specialized character. Persons to discharge functions of research, business management, and special phases of supervision will be professionally trained for their tasks. The superintendency will under such conditions tend to become comparable in function to the business executive and consulting engineer in one.

Our third inquiry should be concerned with how much of a body of knowledge is available to those who would learn the sciences basic to the profession. The vast libraries available to students in law and theology are well known. Research in the sciences fundamental to the practice of medicine has resulted in collections beyond the power of any student fully to master. In education we find little published prior to 1900 except in the history and philosophy of the subject. Of recent years, however, there has developed an extensive literature in all fields, appearing in the following forms:

1. State and city school reports.
2. Surveys of cities, counties, States, and colleges, together with special phases of education such as Negro education, secondary education, etc.
3. Publications of doctoral dissertations and special investigations by universities and colleges. The series of one university now includes some three hundred volumes.
4. Series on education by commercial publishers. One publisher now has two series with between sixty and seventy-five volumes in each. Another publisher announces eight series in education. One of these contains thirty-six volumes. Nearly every publisher of school textbooks now also prints professional books in education.
5. An extensive magazine literature of weekly, monthly, and quarterly journals.
6. Many volumes of proceedings of annual meetings.
7. An extensive pamphlet literature including many reports of conferences and special investigations.

[7] Pitkin, Walter B. *The Twilight of the American Mind.* New York: Simon and Schuster, 1928. pp. 133-34.

The matter was well summarized in 1925 when Dr. Jesse H. Newlon addressed his colleagues as follows:

We have witnessed in the past twenty-five years the development of a science of education. Our presence here denotes the fact that we are interested in the scientific aspects of our work. We are rapidly passing out of the age when a superintendent will be measured by his personal popularity brought about by his handshaking, backslapping propensities, by his ability as a *raconteur*, as an entertaining public speaker or as a wily politician. The superintendent of the future will be an educational engineer. He will approach his work as a great engineer approaches his problems, bringing to bear all of the technical knowledge at his command. Of vastly more importance, he will appreciate and employ the services of those who are experts in the numerous fields of education. The educational program formulated under his direction will meet the acid test of public criticism, because it will be founded on the bedrock of sound investigation and research and not because of the personal popularity or the political ability of the school administration. [8]

The fourth item for consideration should be concerned, I think, with facilities for training. The rapid growth of graduate schools of education is so well known that it requires little comment here. The facilities which these offer for instruction of real professional type, however, call for brief notice. During the past few years, courses of a new kind have been appearing. They offer actual contact with problems in the school. The large volume entitled *Problems in Educational Administration* marks the opening of a new day in superintendency. In the introduction Strayer says:

But the principal emphasis in professional courses for the training of superintendents of schools must be upon the analysis of the work to be done, and the development of the techniques essential to the adequate solution of the problems the administrator must solve. The more certainly the student deals with genuine problems during his period of training, the more likely he will be to meet with success in the field. Knowledge of the facts of educational administration cannot be substituted for practice in applying these facts to the solution of administrative problems. It is just as certainly possible to provide definite professional training for the superintendent of schools as it is for the doctor, lawyer, or engineer. With the development of these professional courses we may confidently expect an increase in the efficiency of workers in this most important branch of the public service. [9]

[8] Newlon, Jesse H. "Why is Superintendence?" *Proceedings of the National Education Association.* Washington, D. C.: National Education Association, 1925. pp. 659-60.

[9] Strayer, George D., Engelhardt, N. L., and others. *Problems in Educational Administration.* New York: Teachers College, Columbia University, 1925. p. ix.

In the same year Dean M. E. Haggerty, addressing the school administrators of the State of Minnesota, said in part:

> The training of the school superintendent should have a professional, rather than an academic, emphasis. Academic training aims to provide the learner with a body of knowledge, logically consistent in itself; professional training is designed to fit men for service in a field where knowledge is put to the test of practical usefulness. The end of the professional student's training is not the possession of a body of knowledge; the aim is that he shall be fitted to perform efficiently the duties of a particular kind of position. During the years of professional training he may ignore every kind of study except that which will make him a better workman. The object of this training is not to make a cultivated man; the purpose is to prepare a competent and expert servant of society. Only that study and training is professional which contributes to this outcome.[10]

Two years later, in 1927, Teachers College, Columbia University, published a second volume designed for use in courses of the new type—*Public School Business Administration*, by N. L. and Fred Engelhardt. Truly a new day for our calling is dawning. Professors of education are not only seeing the need of special courses, but they are beginning to produce the books and outlines which will place within the reach of every aspiring scholar of education, be he teacher or student, the instruments needed to assure breadth of information and an understanding of widely diverse problems.

A profession, according to Webster, is "a calling in which one professes to have acquired some special knowledge used by way either of instructing, guiding, or advising others, or of serving them in some art." A calling which engages the time and energy of some twenty-thousand persons in caring for the education of twenty-five million children is no mean business. Those engaged in it today are analyzing and refining its functions. They are organizing their duties after the plans found most effective in business and in other professions. They are exchanging experiences, measuring carefully the results of experiments, and collecting a literature of special knowledge. Finally, they are demanding a type of special training designed to fit them specifically for the tasks to be undertaken. The progress we have made in a short sixty years in studying our problems, recording our experiences, and profiting by our mistakes in a trial-and-error procedure, and the advance which we have made in less than a quarter-century in developing research techniques augur well for the future.

[10] Haggerty, M. E. *Training the Superintendent of Schools.* Minneapolis, Minnesota: University of Minnsota, 1925. p. 19. (Bulletin of University of Minnesota Vol. 28, No. 17)

Deafness in the Schools

Edmund Prince Fowler[1]

It is obvious that the treatment problem for the very deaf and deaf mute is quite distinct from the treatment problem for the hard of hearing. The former seldom attempt to enter regular schools because of the known deafness. The latter regularly attempt to enter and carry work in our schools, because no one believes the deafness to be marked, or because neither pupil nor parent is cognizant of any deafness. I shall discuss only the treatment of the hard of hearing, not of the very deaf or deaf-mute.

Until three or four years ago, no attempt had been made to solve the problem of the deafened pupil in our schools. Today over a score of cities have instituted scientific methods for examining the hearing of their school children, and it has been calculated from recent surveys that there are three million deafened school children in the United States.

DETECTION OF DEAFNESS

Few school children realize that their hearing is imperfect even though it may be markedly down. In a school of one thousand pupils of whom sixty-one were found with subnormal hearing, only fourteen, one-fourth, admitted having any defect in either ear and only two any real deafness, although there were several pupils totally deaf in one ear. Unless pupils are markedly deafened, it is not a simple matter for the teacher to determine which pupils in her class are hard of hearing. The great majority of deafened children are not very deaf, and moreover, they frequently become so efficient in reading the lips of the teacher that every one is deceived as to their hearing ability. This may go on for years.

To determine the best method for examining the hearing of school children, Doctors Douglas Macfarlan, Philadelphia; Horace Newhart, Minneapolis; F. W. Bock, Rochester; and I have cooperated with Harvey Fletcher of the Bell Telephone Laboratories, New York. It was generally thought that the whispered voice, changing in loudness or with varying distance from the pupils, could be used for group testing, but we found that the results obtained were so unreliable and the time consumed so excessive, that this method had to be abandoned. Likewise, all the other older tests were found unsatisfactory, not only because they required experienced testers and

[1] Director of Research and Clinics, The New York League for the Hard of Hearing.

consumed too much time, but because they usually have the grave defect of not determining the amount of hearing loss when one ear is normal.

The problem was solved by the development, by the Western Electric Company, of the phonograph audiometer (see Figure 1), which reproduces speech, so graded that each group of spoken figures may be reproduced with a difference in intensity of three sensation units. A sensation unit—a unit for measuring hearing capacity—is the amount of increase in sound intensity just sufficient to be perceived as a change in loudness. Therefore, a loss of three sensation units in hearing acuity means that three such increases in sound intensity above the average normal requirements must be made before the ear just hears the sound. All sensations are detected logarithmically. Simple illustrations of this fact were given and the logarithmic scale explained. In the phonograph audiometer this graded diminution in the intensity of the spoken words begins 30 sensation units louder than is required for normal hearing and descends to three sensation units fainter than the average normal ear can hear. The reason for using three sensation units instead of intensity intervals of one or two sensation units is because of the untrained observer a change in intensity of sound equivalent to three sensation units is more distinctly sensed, and because the time and cost of apparatus is markedly diminished thereby.

In our surveys in New York, we have taken a loss of 9 sensation units or more to indicate defective hearing. It might be better to make the standard a loss of 6 sensation units, because all the border-line cases should be retested, and many incipient diseases of the ear will be missed if we keep to the lower standard. The procedure for testing the hearing of a group of pupils to detect those whose hearing is below the average follows.

MANAGEMENT

The school principal notifies all teachers that the hearing of the pupils is to be examined and that co-operation of all is necessary to insure satisfactory tests. The teacher of each class should be notified five minutes before the class is to report in the testing room. The testing room should be as much isolated from all disturbing sounds as possible, and all pupils warned to observe silence in the vicinity of the testing room. Each pupil should have two sharpened pencils, and the teacher should have a supply for emergency. Of course, the method of instruction for pupils and teachers and the conduct of classes will vary according to changing conditions.

The audiometer is set up in the testing room and receivers distributed to each pupil's desk. A group of children who are being tested by the use of the phonograph audiometer is shown in Figure 2.

The following comprise the preliminary questions to be answered on the forms placed before each pupil, R to indicate right ear, L to indicate left ear, and B to indicate both ears.

1. Did you ever have an ache or pain in your ear? ..... Which ear? ..... When? .....
2. Did you ever have a running ear? ..... Which ear? ..... When? .....
3. Does it run now? .....
4. Do you ever have noises in your ear like buzzing, hissing or roaring? ..... Which ear? ..... When? .....

The receivers are placed over the right ears of all in the group, and inspected by the tester to insure proper adjustment. For the fourth grade and above the audiometer speaks three digits at each intensity, and this is explained to the pupils after they are seated in the testing room. For the small children below the fourth grade, two digits are spoken at each intensity if the children are able to write numbers, otherwise these children must be given individual tests.

A chart is placed before each child, and one is drawn upon the blackboard so that the teacher may explain how it is to be filled in. Particular stress is laid upon the necessity of beginning in Column 1 and of writing each group of three figures as it is heard in the successive squares down this column. The examiner explains carefully to the children that when the woman's voice from the phonograph is no longer heard they are to remain very quiet, because the voice will begin speaking again, very faintly at first, and they will miss it if they do not listen intently. When they do hear it again, they are to write the figures down the second column beginning at the top space as in the first column. Columns 3 and 4 are to be used in like manner, the only difference is that the voice speaking, instead of being that of a woman as in the first two columns, will now be that of a man. After testing the right ears the receivers are adjusted over the left ears, and the test is repeated. It is well to make the test a game, a competition between the pupils as to who can hear most accurately and record what he hears on the test blank.

In Figure 3 is shown the entries on a chart which were made by one pupil during a test. The master sheet used to check the accuracy of the record lies adjoining Column 1. One may easily check the point at which the child failed to record the numbers. The distance

of this check down the columns will indicate the hearing loss as noted in the figures in the column on the extreme left of the chart. The method of determining the so-called "Hearing Loss" may be determined by examining the records of four pupils which are given in Figure 4. After retesting all doubtful cases with the phonograph audiometer (4-A), those below the standard set, 6 or 9 sensation units, should be tested by the 2-A audiometer, which is a machine used to test the hearing at a great range of tones. Audiograms of both ears are made to determine accurately the hearing loss at the different frequencies. This test is best done after the whole school has been tested and retested by the 4-A phonograph audiometer. A school of ten or twelve hundred children may be tested and the doubtful cases retested in less than three days. A class of forty may be tested in about fifteen minutes. By no other known method may this be accomplished so rapidly or so accurately.

For three successive years Public School 173, New York City, has been surveyed, and considerable information obtained regarding the incidence of deafness in school children. Many interesting facts have been obtained.[2] In a group of 55 hard-of-hearing children, 32 boys and 23 girls, a total of 65 grades were repeated, whereas in the same number of normal-hearing children, a total of but 14 grades were repeated—almost five to one. Dr. Bock estimated the cost of repetition of a grade at $60 and states that three and a half times as many hard-of-hearing children repeat grades as do normal-hearing children. I have estimated the proportion of grades repeated by the deafened and normal pupils to be as 5 to 1. This gives some idea of the cost and waste of effort necessitated by lack of proper detection, management, and treatment of deafness in the schools.

One year ago Dr. Fletcher and I completed our third annual survey of the hearing of the children of Public School 173, Manhattan. The procedure was as in former years with the 4-A audiometer above Grade III-A. Retests of all pupils below 9 in the first test were made, and children falling below 9 sensation units on the retests were classed as hard of hearing and examined with the 2-A audiometer. I now advocate as a routine using only five frequencies with the 2-A audiometer, that is, 256, 1,024, 2,048, 4,096, and 8,192. If sharp breaks occur in the hearing curve, it may be advisable to take intermediate frequencies. This can be done only by using a more elaborate

[2] Data showing the number of border-line cases which passed first into the deafened and then into the hearing classes and vice versa during the three years, the number of new cases found each year; and the number of original cases deafened that remained in the school, etc. will be published in detail in a paper to be presented before the American Medical Association meeting, at Portland, Oregon, July, 1929.

instrument than the 2-A audiometer, that is, the 1-A audiometer as used in Public School 173.[3]

After the children have been examined, and it has been determined which are normal and which are deafened, and to what degree, there is at present no standard by which we may gauge the fitness of the child for the various methods of instruction. We must determine whether the child is best fitted for: (1) regular classes; (2) regular classes with the aid of special teaching; (3) special classes with the aid of lip-reading; (4) classes for the markedly deafened. From hearing ability alone no definite gauge of a child's capacity for oral instruction will ever be obtained, because mentality and disposition enter so largely into the problem that many children will be able to remain in their regular classes, though they are harder of hearing than others who have to be put in classes for lip-reading.

Of course, those who rate a loss of less than 20 sensation units should be able to remain in their regular classes if they be given front seats, and it is surprising how well this maneuver will solve the problem in many cases. Those who are down 20 to 25 sensation units will usually need special instruction in lip-reading, although many of these children will be able to continue in their regular classes. The very deaf will require instruction in special classes and schools, which every locality should provide. One point should be kept constantly in mind: no matter whether the children are in the regular classes, aid classes, lip-reading classes, or the schools for the deaf, they must regularly associate with normal-hearing children, because otherwise they will not grow up with the normal emotional or educational equipment.

Management of these pupils should not cease in the classes. Parents or guardians should be instructed regarding the handicap from which the child suffers and should be urged to use simple means for home aid, such as loud speaking, clear enunciation, repetition of sentences, patience when words are not understood. They should realize that the child may appear stupid only because he does not hear and hence cannot become acquainted with new words. There is also the tendency of the deafened to withdraw from society if they feel much embarrassment or annoyance from their disability. This must be carefully explained to parents and teachers of the deafened. Many intelligent parents may greatly aid in managing the deafened child, and a few may aid in teaching.

Is the detection of deafness and its management as I have just outlined all we are going to do for the deafened child? Unfortunately, in many cases that is all which will be done. To my mind, it is

[3] This is the original device introduced by R. L. Wegel and the speaker in 1922.

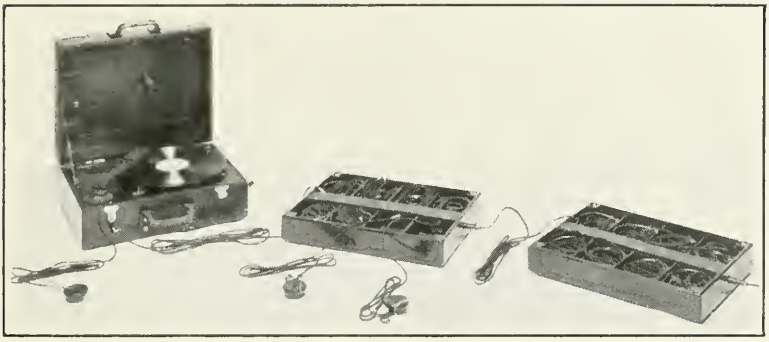

Fig. 1. A phonograph audiometer

Fig. 2. A group of children being tested for acuity of hearing

NAME John Smith

AGE 13

GRADE 6A

DATE Jan 25, 1926

DO NOT MAKE ANY NOISE
AS IT WILL SPOIL THE TEST

INSTRUCTIONS

You will hear numbers spoken by a person who is moving away from you. The voice will get weaker and weaker. Listen carefully and write as many numbers as you can.

MASTER SHEET
Record No. 1

Hearing Loss	1	Test 1	Test 2	5	6	7	8	Hearing Loss
				LEFT EAR				
30	526	526	538	483	853	541	466	30
27	398	348	363	525	436	285	868	27
24	414	414	318	624	841	115	543	24
21	111	111	868	432	218	821	225	21
18	648	648	338	856	444	118	262	18
15	526	526	182	416	483	431	444	15
12	826	826	548	638	441	284	622	12
9	363	363	351	463	18	431	445	9
6	523	528	341	844	238	123	688	6
3	604	634	588		661			3
0	131	124	565		433			0
-3		858	134					-3

Hearing Loss 0

Fig. 3. The chart bearing one pupil's record for the audiometer test

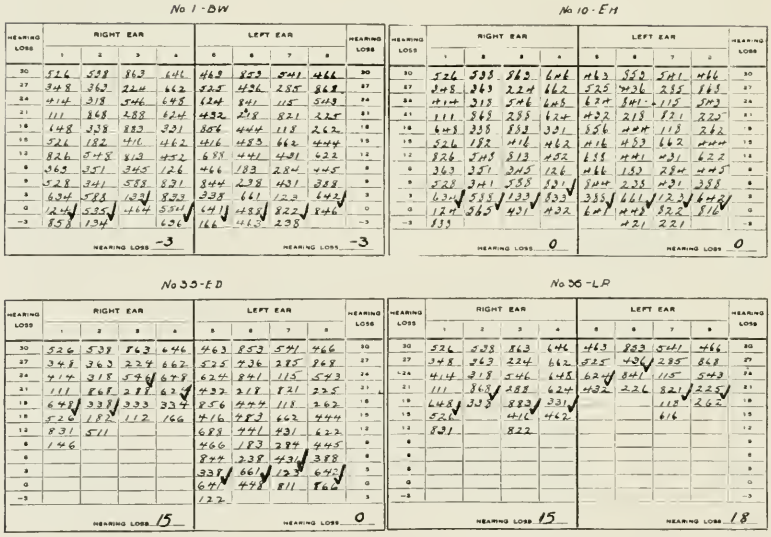

Fig. 4. The record of four pupils showing the estimated "Hearing Loss" of each

a crime merely to pick out the deafened and arrange for their teaching. The deafened will survive and thrive best if they are given even a little more hearing, and that brings us to the third division.

TREATMENT

The problem of the treatment of the deafened pupil is even more important than the problem of his detection, management, and teaching, and if this problem is successfully met the others will largely disappear. The first requisite for proper treatment is a careful, complete otological examination. This is impossible at present on a large scale except in isolated instances, but there is no reason why competent men using standardized methods of procedure could not be employed in every city and large town in the United States. If any progress is to be made in the study of the etiological factors underlying many forms of deafness, the examination, audiometric and otherwise, of school children must be complete; and to accomplish much, they must be repeated regularly year after year. They should also include, besides the usual tests and observations, accurate records of stereoscopic X-ray examination, blood chemistry tests, and specific data for research. This can be done by sending all deafened pupils to a clinic established for this purpose and maintained under the direction of paid attendants.

My statistics indicate that, although there is often no history of suppuration obtainable, ninety percent of deafened children show distinct signs of present or past purulent or muco-purulent inflammation in the ears. It is well known that suppuration may occur in a child's ear and the secretion escape by way of the large Eustachian tube into the throat without complaint of the child and without detection by his elders. It is not so well known that, though no distinct pathology be apparent, chronic low-grade inflammations of the linings of the ear and nose spaces may be present and that such inflammations may be potential factors in the causation of deafness.

These inflammations are interpreted usually as "catching another cold." Remember that the child, being a small person, lives most of its time nearer the floor than the adult, that the surface of a child's body is much larger in proportion to its size than is the case with the adult, and that there are on the floor a constant coolness and drafts, which are not felt at higher levels. These facts with improper diet, clothing, and ventilation are a few of the factors subjecting children to frequent inflammation of the respiratory membranes.

There has been a good deal said about the inheritance of deafness. My opinion is that the inheritance of deafness is exaggerated, although it is true that we tend to inherit like structure from our forebears, and

like structure favors like behavior. However, unless we are born deaf, it should be possible successfully to combat the development of anatomical or functional peculiarities potentially threatening the hearing, and some day it may be possible successfully to combat such processes even before birth. In other words, potential deafness should be attacked before it becomes real deafness, before irreparable damage has been done. The prevention of deafness in the potentially deaf is one of the problems which will be solved only by a systematic carrying out of such programs in detection, diagnosis, treatment, and laboratory research as I have superficially outlined.

For several years I have been accumulating hundreds of very complete histories which are being studied. Last year I reported one hundred consecutive cases of ear disease in children wherein it was found by the aid of the stereoscopic X-ray that 86 percent showed definite disease in the nasal sinuses—without stereoscopic X-ray examinations it is difficult and often impossible to diagnose sinus disease. In the remaining 16 percent, some sinus disease was present, but this was not counted because it was of small degree. It was concluded from these findings that the occurrence of inflamations in the nasal sinuses with diseases of the ear was not wholly coincidental, but that as the ear sinuses are connected with the nose it was not surprising that they should be regularly diseased concurrently with or following disease of the nasal cavities.

As I have pointed out before, this does not mean that the nose alone is the cause of all ear trouble any more than that the ear is the cause of all nose trouble. It does imply that in health and in disease the cavities of the ear and nose are closely associated and that infections in one or in the other usually occur simultaneously or at short time intervals. It follows that to prevent or correct disease in the nose or in the ear both must be kept in mind.

Any inflammation in the head spaces means that the membranous lining of these spaces are diseased. Whether it is a common or uncommon, an ordinary or an extraordinary condition depends upon several factors. As intimated before, the stereoscopic X-ray makes it possible to look inside of the head and to see the marked changes which occur within the spaces and the surrounding walls in the neighborhood of the ear and the nose. The usual flat X-ray picture and its interpretation is useless for determining the finer points of ear and nose disease.

If taken at the right time every ordinary cold will show some disease of the sinus spaces or walls, and consequently every ordinary cold is potentially or actually a sinusitis. It is well to remember that

the X-ray may not detect slight sinus disease, but that even a slight disease may be the cause of serious trouble in the ear. My investigations have demonstrated that, although no disease may show about the ear, the nose spaces may give important data to aid in the interpretation of deafness. It has often been taken for granted that because no definite changes can be seen in the ear that none are present, but this of course is a fallacy which cannot be too forcibly combatted.

If the X-ray be taken early, the sinuses may show distinct disease. Even without treatment some of these cases may return to near normal and do so repeatedly, though tending to a lessening degree of recovery as the attacks recur. However, the recovery of hearing in these cases often appears to the patient to be much better than it actually is, because it is difficult to keep in mind the former hearing ability. Repeated audiograms will eliminate this difficulty. These are the cases which go on to a form of progressive deafness unless something is done to arrest the vicious process.

In children especially much may be done in the way of treatment to prevent and even cure progressive deafness. The aim of treatment is to restore the sinuses of the nose and ear to normal. This can usually be done by non-operative measures and careful management. Occasionally surgical means are required. A most important part of the prevention of deafness in children must be accomplished in their homes where much of the management and some of the simpler therapeutic measures may be carried out.

In the clinic which I direct for the New York League for the Hard of Hearing we record for our patients besides the graph of the hearing, complete X-rays and blood chemistry data. The purpose of this elaborate record is to improve the technique for the study of each case and thus to benefit the hard-of-hearing pupil. Something may also be learned to prevent future generations from having as many hard-of-hearing children and adults as does the present.

In the clinic when repeated X-ray pictures have been taken, these frequently show a change for the better coincident with the restored hearing. This has never before been graphically and positively demonstrated. It is of paramount importance, because it shows a method of preventing progressive deafness and a way to restore the hearing not heretofore appreciated. I cannot too forcibly stress this point.

Our interest in the deafened child should not cease when we have determined how deaf he is, what the type of his deafness is, where he should be placed in school, and how he is to be started in his life

work, but should continue throughout life, so that the hearing may be checked up from time to time and treatment applied if needed. Even if in certain cases no improvement can be obtained, effort is warranted to prevent increasing deafness. It is often assumed that deafness is an unfortunate accident, or in some way a visitation of an adverse providence, and that nothing can be done about it. This is not true. By present means and methods properly applied, even today the great majority of children whose hearing is below normal may not only be improved but often brought back to average normal.

Many forms of progressive deafness, including otosclerosis, about which very little is known, originate in childhood. Recent research makes it more and more apparent that progressive deafness is due to more than one factor. Preventive measures must be instituted in childhood because in the adult the outlook is not so favorable, though even here it is criminal to neglect deafness because of the usual attitude of the patient and the physician in thinking that nothing can be done. The deafened person and even his physician are often looking for a cure-all for deafness. There never will be a cure-all for deafness, but today enough is understood about the ear and its diseases to promise benefit in the majority of cases and complete restoration of hearing in many. It will be largely through the co-operation of the teachers of the young that invaluable data for the conquest of deafness will be obtained.

Personnel Studies of the Teaching Staff

Thomas W. Gosling[1]

It is an interesting fact that at the very time when mass action has assumed great importance, when collective bargaining has received many sanctions, when the importance of the group and of group activities has been stressed, when great importance is attached to co-operative endeavor in all forms, and when social psychology has become one of the important studies, there should at the same time be increasing emphasis upon a study of individuals and upon an analysis of personality. The interest in personnel studies may be taken as an indication that the individual is not to be swallowed up in the mass, and that in the recognition of the individual, definite limits are to be set to the ominous development of mass thinking and mass action.

There are two very important reasons which make it desirable if not imperative to develop personnel studies of the teaching staff. The

[1] Superintendent of Schools, Akron.

first reason grows out of the relation of the public to the schools and out of the demands which the public is making upon the teachers. The second reason is individual in nature and grows out of the values which may accrue to the teacher himself.

In large numbers of our American cities boards of education, representing the public, have set up salary schedules for teachers. Usually the annual increments paid to the teachers are based upon length of service, or they are made dependent upon the attainment of certain objective requirements such as travel or additional professional study in college courses. Occasionally the attempt has been made to grant annual increases on the basis of merit. On account of the lack of objective measurements of merit and because of the inadequacy of the purely subjective measures applied, the attempt to base increases in salary upon merit alone has been generally disastrous. Practical considerations have forced boards of education to make the salary increases almost if not quite automatic.

The net result of our present methods of operating salary schedules has been to restrict the opportunity of the best teachers to receive salaries commensurate with their worth and at the same time to lift the semi-incompetent and the inefficient to the level of the best. This is a wasteful and pernicious result and cannot always continue. Where there is a limited fund for the payment of salaries, it is obvious that if the poor teachers are to receive salaries equal to those paid to the good ones, the general level of all salaries is held down to a lower plane by the weight of the mass. The public is altogether willing to pay adequate salaries to the best teachers. It will not always be willing to pay any salaries at all to the incompetent.

In order that personnel studies of the type indicated should have a maximum value, they must be cumulative and composite.

> None of the isolated bits of information that make up a record would justify any definite conclusion regarding the abilities and the interests of a teacher. It is the cumulative effect of objective observations concretely stated, showing glimpses of conduct under varying circumstances and spread out over a series of years, that delineates a real bent, that manifests the persistent interests that dominate a life.[2]

A record of this kind should begin far back in the life of the individual; it should continue through the school and college years; and it should have frequent increments throughout the period of professional service. That which counts most in an individual's life history is the general trend. By means of adequate personnel methods, this

[2] American Council on Education. *Educational Record*, Supplement No. 8, July, 1928.

trend may easily be discerned. The life history may be read like a book. When this kind of objective evidence is available, school administration will be able to eliminate snap judgment based upon subjective impressions.

There is further a heavy obligation resting upon school administration to discover, to develop, and to reward exceptional merit in teachers. Unless this merit is definitely known, it is, of course, impossible to take appropriate action. One of the most deadening things which any one can do is monotonously to perform routine tasks without hope of change, of recognition, or of reward. This type of activity is deadening everywhere; it is deadening in commerce and in industry; it is especially deadening in teaching where an unusually high level of intelligence and of ability is expected. Consequently, personnel studies which will enable school administration to recognize the most meritorious members of the staff will be of tremendous value not only to the public but also to the individual teacher. To build up adequate cumulative and composite records for every teacher will require much of time and of effort. The results, however, will yield rich returns.

JOINT MEETING WITH
SCHOOL BUSINESS OFFICIALS

Styles of School Architecture

W. R. McCornack[1]

Ruskin says, "Architecture is the art which so disposes and adorns the edifices raised by man for whatsoever uses, that the sight of them may contribute to his mental health, power, and pleasure." The ability to judge school architecture depends upon the same background of culture and knowledge of styles necessary to the appreciation of any other type of building. Good architecture in a nation depends, first, upon the ability of the masses of the people to judge the good from the bad; and second, on these same qualities being found in the individuals and small groups responsible for each building. It is the quality of these small groups which is responsible for our present progress, for America is, indeed, today producing the best modern buildings of the world, which fact is the reverse what has long been the order of things.

Based on the judgment of the ablest critics, it is estimated that Washington contains 20 percent of good architecture and environ-

[1] Architect, Cleveland.

ment; Philadelphia, 15 percent; New York, Boston, and Los Angeles each 12 percent; San Francisco, 11 percent; Chicago, 8; while Paris has 90 percent. While this is not a good showing, there is an awakening of architectural appreciation in America, and some of the small communities, like Forest Hills, Long Island, and others, are beautifully planned and executed and are rated as 95 percent beautiful.

It is my belief that the percentage of beautiful schools is no higher than the average of the community in which it belongs, and perhaps not as high. How to know and judge the architectural style of schools is not a matter of rules to be laid down by a trained man for a layman to follow. The observer must build within himself a groundwork to use as a basis for intelligent judgment. An untrained person will often ascribe architectural virtues to a building that do not belong to it.

The school superintendent is the most potent factor, or should be, at any rate, for the upbuilding of a desire in the community for buildings of good architectural style, and every man who goes into the teaching profession should have a background of culture in the arts, especially if there is any chance that later he may become a school executive charged with the responsibility of building. He should not only recognize a good architectural design, but know the style in which it is designed. How may this be brought about? Make use of the libraries, and study the books dealing with the history of architecture, and you will soon begin to have a friendliness for and an acquaintanceship with the best buildings in the world. Every school library should have a few standard works on architecture and the appreciation of art. Study them. When you visit any city, make a point of seeing the buildings which are known to be examples of good architecture, and see whether they awaken a responsive note in your being. Read about them in the histories, if they are old, or in the current architectural magazines, if they are new.

The styles found generally in school architecture are: the Colonial, reminiscent of the Classic; the Gothic; Spanish; and sometimes Italian. The slides and detailed descriptions of these cannot be included in this brief summary.

One of America's great architects, Ralph Adams Cram, says:

> It should be borne in mind that richness and elaboration are not the essence of beauty; the Washington Monument is the noblest architectural structure in the United States; the Philadelphia City Hall well-nigh the ugliest. Composition, proportion, fine relationship of parts, purity of line, nobility of mass, perfection of workmanship, the evidence of the affection-

ate labor of the human hand, are the chief elements of good architecture. Elaborate articulation of parts and ornament are something added, good and admirable if they are beautiful in themselves, honest and of fine craftsmanship, but they are the *bene esse* and not the *esse* of architecture.

Recent School Legislation

J. L. Clifton[1]

Amended Substitute Senate Bill No. 70.—An act to provide for the establishment of Bowling Green State College and Kent State College.

On and after the passage of this act, the Bowling Green State Normal School and the Kent State Normal School shall be known as the Bowling Green State College and the Kent State College, respectively. The boards of trustees shall continue to exercise their respective powers and perform the respective duties with authority to provide courses for the training of elementary teachers, and also to provide standard courses leading to the degree of bachelor of science in education. They are also authorized to establish courses leading to the degree of bachelor of arts and bachelor of science. The boards of trustees may confer such honorary degrees as are customarily conferred by colleges of liberal arts in the United States. These colleges shall be supported by such sum and in such manner as the general assembly may from time to time provide.

Amended Senate Bill No. 92.—An act relative to the pension fund for custodians of the public school.

Within thirty days after a majority of the custodians employed by the board of education in any city school district have filed with said board a request that a pension fund for custodians of the public schools be established and have signified their desire to be members of such fund when established, said board may establish such fund which shall be under the management and control of a board of trustees. Such board of trustees shall be composed of three members, two to be elected by said board of education and one to be elected by the custodians who are members of such fund. The members of said board of trustees to be chosen by the board of education shall be selected in such manner as the board shall determine. The member to be elected by the custodians shall be chosen by ballot.

In every school district where the custodians pension fund has been established, the board of education shall cause to be paid into

[1] Director of Education, Ohio State Department of Education.

said pension fund in each fiscal year by appropriation from its general or operating fund either (a) a sum equal to not less than one-tenth of one percent or more than one-fifth of one percent of the amount collected by said board for all purposes during such fiscal year; or (b) a sum equal to the aggregate of the payments into said pension fund by the custodians, during such fiscal year as hereinafter provided.

As soon as the board of trustees shall meet and organize they shall order and assess each member of such custodians pension fund a sum equal to four percent of the annual salary of each custodian in so far as it does not exceed $2,000.00, this contribution shall be returnable under the same conditions provided under the state teachers' retirement system.

The board of trustees shall cause an actuarial valuation of the present and prospective assets and liabilities to be made by a competent actuary at least once in every three years.

Amended Senate Bill No. 137.—An act to extend the term that a pupil may be retained in the state school for the deaf and the state school for the blind.

The age at which pupils may be received at the state school for the deaf and the blind and the number of terms they may attend shall be determined by the director of education and superintendent, giving due consideration to health, habits, temperament, mental, qualifications, and possibilities of achieving a high-school education.

If at any time the director of education and superintendent determine that a child is not making sufficient progress in its school or industrial work to justify its continuance as a pupil, they may return it to its parents, guardian, or proper agency which would resume its care.

The director of education may provide for the further and higher education of any blind pupil. Any fund appropriated for such purpose shall be distributed under the direct supervision of the director of education, but no person shall receive the benefits conferred by the provisions of this section who shall not have had an actual residence in this state for at least two years.

Amended Senate Bill No. 244.—An act to make the distribution of the educational equalization fund subject to the approval of the controlling board.

This act provides that the director of education, with the advice and consent of the controlling board, shall issue formulas and regulations for determining the educational need of districts for current expense, and in determining the amounts necessary, for current expense purposes, in the operation of Sec. 7597 he shall be gov-

erned by these formulas and regulations. The distribution of the reserve fund of any further balance in the educational equalization fund, and of any part of the equalization fund appropriated for rehabilitation of school districts shall be on presentation of needs made to the controlling board by the director of education, and the consent of the controlling board shall be required for each item of allotment for such needs.

House Bill No. 11.—An act relative to teachers' county institutes. In place of the county institute provided for under Sec. 7869 the county board of education may authorize the county institute to be held after the opening of the schools on Saturdays, but for not more than four such days in any school year. A part of the county institute may be held before the opening of schools and the remainder after the schools are in session, however in no case shall it be for a longer period than four days.

House Bill No. 117.—An act to make sundry appropriations.

To the department of education $800,000.00 was appropriated for educational equalization to cover the maintenance operation to January 1, 1929 of the schools in the various state aid districts in Ohio.

To the department of education $36,579.78 for the purpose of paying for the maintenance and operation of the state library to January 1, 1929.

House Bill No. 135.—An act relative to the sale of school lands.

Any school land set aside by the acts of congress of February 1, 1826 and February 20, 1833 may be ordered sold by a favorable vote of the people in the township, fractional township, or in any district of county where such land had been appropriated. Should it be impossible to obtain a vote for the sale of the school lands the state supervisor of school and ministerial lands, when satisfied that it will be for the best interests of the school trusts, may order any board of education that has charge of the school district, to take a poll of the electors living within said district. If a majority of electors voted for the sale of said school lands, it shall be considered as the full and free consent for the sale of such school lands.

House Bill No. 145.—An act to authorize the boards of education to employ school dentists.

This provides that each and every board of education in the State of Ohio may appoint at least one school dentist who shall be duly licensed to practice in this state. The school dentists shall make such examinations and render such treatment as may be prescribed by the board of education; provided that such examinations and treatments

shall be limited to the children whose parents cannot otherwise provide for same, and then only with the written consent of the parents or guardians of such children. School dentists may also conduct such oral hygiene educational work as may be authorized by the board of education.

House Bill No. 149.—An act requiring vehicles to come to a complete stop on approaching school busses, receiving or discharging passengers.

The term "school bus" as referred to in this act means any vehicle being used to convey children to and from school and which is marked in both front and rear with the word, "school bus" readable in daylight at a distance of two hundred feet.

The driver of a vehicle when approaching the front or rear of a school bus that has come to a stop, outside of the limits of a municipal corporation, and is receiving or discharging school children, shall stop such vehicle not less than ten feet from the school bus and shall remain stationary until all children have entered the bus or alighted and reached the nearest adjacent side of the highway. All receiving and discharging of children shall be at the extreme right of the highway.

Whenever the driver of a vehicle or school bus fails to carry out these provisions, he shall be guilty of a misdemeanor and upon conviction is liable to be fined not less than ten nor more than one hundred dollars or be imprisoned in the county jail not to exceed thirty days, or both.

House Bill No. 176.—An act relating to county normal schools.

This act provides that all sections of the general code relating to county normal schools be repealed and that all county normal schools be discontinued.

House Bill No. 177.—An act relative to withdrawal of teachers' savings funds.

This act provides that a member who has withdrawn his contributions may restore his status as a present teacher by redepositing in the teachers' savings fund the amount withdrawn with interest at four percent per annum from the date of withdrawal to the date of redeposit provided such redeposit shall be made on or before the first day of January, 1930.

House Bill No. 256.—An act relating to the tax levy for school districts.

This act provides that all funds collected under the levy of two and sixty-five hundredths mills provided in Sec. 7575 shall be placed in the county board of education fund and shall be known as the county educational equalization fund.

On or before the first day of April of each year, county boards of education shall make a survey of the county school districts to determine the number of teachers and other educational employees to maintain the schools of the county districts, after which the county board of education certifies to the local board of education of the county-school district the approximate amounts which they may expect to receive for teachers' salary, and salaries of other educational employees and for transportation.

Annual distribution contributable to teachers and employees shall be according to the following schedule: thirty-seven and one-half percent of the salary of each teacher or educational employee receiving a salary of not less than eight hundred dollars, but not to exceed nine hundred dollars. No school district shall be entitled to receive any portion of this fund until all required reports have been made.

House Bill No. 343.—An act relative to time limit on the transfer of certain school properties.

This act provides that a county board of education may, upon a petition of a majority of electors residing in the territory to be transferred, transfer a part or all of a county-school district to an exempted-village, city, or county-school district, territory of which is contiguous therto. Upon petition of seventy-five percent of the electors in the territory proposed to be transferred the county board of education shall make such transfer.

Any territory which has been transferred to another district, or any part of such territory, shall not be transferred out of the district to which it has been transferred during a period of five years from the date of the original transfer without the approval of the state director of education.

House Bill No. 362.—An act to repeal sections of the general code which are obsolete, unconstitutional, or unnecessary.

The Ideal Superintendent of Schools

J. S. Mullan [1]

I am inclined to believe that your program committee was wise in choosing a resident of another State to write upon the subject, "The Ideal Superintendent of Schools from the Point of View of the Business Official," but I question the wisdom of your committee in their choice of the particular person. I believe that if in all cities the relationship between the superintendent and the business official

[1] Secretary and Purchasing Agent, Board of Education, Rochester, New York.

were as congenial as in the city where I serve, there would be no need for any discussion of this subject.

Through contacts with members of our National Association of Public School Business Officials and others, I am convinced that there are cities where this spirit of co-operation does not exist between the superintendent and his subordinates. A few weeks ago the secretary of the board of education from one of our neighboring cities called at my office and in the course of our conversation I asked him if he were going to attend our annual convention this year. He replied that each year he had received my letter of invitation but had never been able to get it past the superintendent. In other words, it never reached the board of education. It was quite apparent that the superintendent did not deem it wise to have the secretary of the board attend the convention. This is only an illustration of the conditions that exist in several cities, at least so I am informed. In other words, where "czar rule" is being enforced, superintendents do not wish their subordinates to attend conventions for fear that they might be able to teach them something upon their return.

Do not misunderstand me. I do not believe that the superintendent should be subordinate to the business official. I believe that he should be the head of his system, but there can be no doubt that co-operation between the superintendent and his subordinates means closer organization and better service. No man is equal to managing successfully all the problems of a large school system in a single-handed fashion. What we need is team work.

My reason for believing that the superintendent should be the chief executive is due to the fact that there are two distinct divisions in school work: one the educational field and the other the business field. There would be no occasion for the business end were there no educational end. Why, then, expect the tail to wag the head? The superintendent should be the chief; but, if he is of the ideal type, he will not play snap-the-whip with his business partner. While our subject has some controversial possibilities, let us here agree that public-school systems exist for one purpose only and that purpose is to educate children. A superintendent of schools is an educator. His business is education. His preparation for his life work has been mainly educational. The business administration is foreign to the average superintendent; and he must, in order to obtain efficiency, delegate to his business official the general financial program. The two must co-operate unceasingly for the best results.

An ideal superintendent, in my judgment, is a man who seeks co-operation—one consulting with and, in the main, accepting the

judgment of his business official. If there is any question as to the ability of the business official to exercise good judgment and render worth-while suggestions in matters relating to his work, he should be replaced by a new business official at once.

A business official to be master of his job should qualify himself to offer constructive suggestions regarding his particular work. In order that he may keep abreast of the world in his special field, I am very emphatic in the belief that boards of education should not only permit but insist that their business officials attend at least one convention a year where information pertaining to their particular job may be obtained. An ideal superintendent will recommend to his board that his subordinates be sent to at least one such convention a year.

An ideal superintendent, in my judgment, will inspire the confidence of his business official in matters of expenditure by showing that their interest in the elimination of unnecessary expenses and of waste is a mutual one. To this end, the superintendent will confer frequently with his business official. The vital problems that are constantly before a school system of today may not be rightly solved by any one single individual. They are best solved by co-operative judgment after a full consideration of all the various interests involved.

An ideal superintendent should regard every department of a school system as a service department designed to secure the maximum results from the taxes levied for the good of the school children of the city. By virtue of the New York State Law, our superintendent is the chief executive. There are other states where laws are similar, although in some states business officials answer directly to the boards of school commissioners or boards of education. The city of Worcester, Massachusetts, operates upon the latter plan, and I am informed that the plan works out satisfactorily. It is not my purpose to say which is the better. I believe, however, that it is not wise to attempt to make an arbitrary separation between the educational and the business interests of the schools. Less wise is it to attempt to put either the educational department or the business department in complete control. There should always be complete co-operation between the two departments rather than domination by either one.

The old argument that there should be two operative heads, a superintendent of instruction and a business manager with equal rank and authority, does not solve the problem. Each head would have too wide a field to be an expert in all the lines of work, and each would require the services of a specialist. I believe we should follow the example of "big business," the large corporations, so far as executives are concerned. What I mean is this: The ideal superintendent

as commander-in-chief of the army, should have his officers of various rank in command of several subdivisions with the board of education functioning as the supreme governing body. An ideal superintendent should have a well-organized system with thoroughly trained experts in charge of each department. Each expert should think through the problems of his department and formulate and follow through plans for their solution. Well-planned business organization operates in such a manner. Why should school departments not do so?

The ideal superintendent will then make his job his chief concern and will let each business official carry out his work without interference, provided, of course, that the work is being done to the satisfaction of the members of the board of education. If both the superintendent and the business official attend to their respective duties and co-operate as they should, there will be no possibility of lasting difference of opinion. The school superintendent has more than a one-man job when he attends strictly to educational matters. On the other hand, the business official has all he can do to take care of the business end. Both, however, must work together if the desired results are to be obtained.

Again, the ideal superintendent, in administering the school system under his charge, will work whole-heartedly with any and all other officials regardless of whether they are subordinate to him or responsible directly to the board. He will avoid petty disputes, jealousies, and particularly aggressive opposition to matters in which no principle is at stake. He will not ask or expect the impossible. He should be able by his inspirational leadership to co-ordinate the work of educational administration with that of all other officers or agencies necessary to the satisfactory development of the program. When all is said and done, an ideal condition depends upon personal elements. To have the right kind of person in all the places involved would result in conditions as nearly ideal as is possible in this world.

A superintendent needs to have some knowledge of business principles in order to be efficient, but his work as an educational administrator is so big and so technical and is of such paramount importance that it requires all of his time, thought, and energy. If he attempts to devote any of his time to the business side of the school, he will of necessity reduce his efficiency as an educator. The relation of the superintendent and business official should be that of partners, each having his specific part of the work and responsible one to the other. The superintendent should state what equipment is necessary for educational purposes and delegate to the business representative

the responsibility for the economical purchase and prompt delivery of such equipment as will satisfactorily meet the stated requirements.

Let me explain here what we are doing to assist our Superintendent and to relieve him of minor details. A conference is held on Wednesday morning of each week and is attended by a group consisting of our two Assistant Superintendents, the Superintendent of Buildings and Repairs, the Examiner of Accounts, the Property Clerk, the Secretary of the Board, and the Purchasing Agent. At these weekly conferences problems are presented for general discussion and opinion, for the solution of which no individual member of the conference group would care to assume the responsibility. The Superintendent does not sit in with these conferences, but he is furnished with a copy of the proceedings of each meeting. If the action taken by the conference group is not wholly satisfactory to him, he calls us into consultation, and final action is then based upon the resultant conclusions. In this way the Superintendent is relieved of a vast amount of work which would make unnecessary demands upon his time and which can be taken care of properly through the conference group.

To return again to our general considerations, the wisest action in any particular instance will not be the individual dictum of any one person, however learned or capable he may be. I believe that mutual friendship between educational and business workers in the schools is rapidly being developed under the management of the most progressive boards of education. It is evident that some superintendents cannot be called ideal, but this may or may not be due to their naturally autocratic dispositions. To them we extend our sympathy as they are standing in their own light, and there is no man so blind as the one who will not see. They cannot get the best results from their fellow workers unless they are willing at least to counsel with them. They may later decide to use their own judgment, but they will know that their decisions were reached only after due consideration.

There should be similar methods in school administration as in business, yet, there should be a clear distinction as to the results to be obtained in each case. The efficiency of the ordinary business official in the realm of business can be judged by the profits he produces. No such criterion can be applied in measuring the results of education. Education does not exist for material profit but solely for the better training of the citizens of our democracy. There rests upon the shoulders of the superintendent grave responsibilities. He is looked upon as an exponent of Christian character, a man above reproach, a man to whom our boys and girls may safely be entrusted.

A superintendent to have the ideal characteristics must be a broad-minded, big-hearted, whole-souled, sympathetic, diplomatic human being, one who judges capacity by results and welcomes originality and initiative in his co-workers. He should have the characteristics of true sportsmanship at work and at play. If the superintendent enters into the sportive life of his co-workers, then you can rest assured that he is their friend and will welcome their advice on problems concerning education. Did your superintendent ever wager a good five-cent cigar with you that he could trim you bowling, or beat you around a golf course, or perhaps drown an angle worm quicker than you; or pat you on the back if you caught a larger fish than he while you were fishing together. The poor fish—not the superintendent—did not even know whether he was biting your hook or his. How much easier to work with a leader of this type! When you return to your office and consider what a congenial fellow your superintendent is, you have perhaps learned for the first time that he is almost human, and you are willing to sacrifice every drop of blue blood in you to assist him in carrying his tremendous load. A superintendent has a just right to expect such co-operation, and he will get it if he is a good mixer.

In fairness to our superintendent, let me say that we may expect too much of him. It may not be his fault that he is a bit cranky at times. Perhaps if you and I had to deal with you and me, we would not always be in the best frame of mind. Let us not forget then that the superintendent is just a human being with a vast responsibility resting upon his shoulders. He needs our fullest co-operation, and perhaps it is part of the business official's duty to assist him in being the ideal superintendent.

You ask, how can we business officials co-operate with the superintendent? This can only be done by a sympathetic and helpful attitude toward him and his work. The success of any group endeavor in human life depends upon the willingness and ability of the group to select from their entire number those especially qualified and best suited to guide the welfare of the entire group and then to give them loyal and unwavering support.

It is not my purpose in this paper to dictate to any superintendent concerning how he shall conduct his office. Let me say in closing that if any superintendent has a conviction that perhaps he has not taken his business officials sufficiently into his confidence, and if he is seeking to bring about a more desirable state of affairs in this respect, I suggest that he visit some of the superintendents where co-operation reigns, not forgetting to stop off at Rochester, New York.

The Ideal Business Manager of Schools

William John Cooper [1]

"It is," "It isn't," or in more vulgar form, "Tis," "Tisn't," constitute vocabulary and line of reasoning of many a child's dispute. Until a few years ago the literature on the relation of the superintendent and the business manager was of little higher order. In 1922, for instance, W. S. Deffenbaugh, Chief of the City Schools Division of the Bureau of Education, after a study of city-school surveys, summarized what the school men had to say in these words: "Practically all the recommendations found in survey reports in regard to the relation of the school board to the business manager of the school system would have him work under the supervision of the superintendent. In other words, they recommend but one head."[2]

In the same year W. T. Keough, business agent of the City of Boston schools, speaking before the National Association of Public School Business Officials, said: "With not a single city voluntarily adopting the 'unit' plan in the past four years and with but two cities voluntarily adopting that plan in the past ten years, is there any evidence of any substantial trend toward the adoption of such a plan in the large cities of the country?[3] Mr. Keough attempted to convince his fellow business managers that great danger was inherent in any plan which placed the schools in the hands of one man. He maintained that greater economy and efficiency could be had if the board of education gave its attention to the schools and to the co-ordination of the work of both educational and business matters than would prevail under a "unit" system. Fortunately the last few years have witnessed a number of studies designed to ascertain the factual basis of the arguments advanced on both sides of this much mooted question.

The surveys of school systems by experts and such investigations as the doctor's dissertations of Harry P. Smith, Teachers College, Columbia University, J. O. Marberry, University of Wisconsin, and A. L. Heer, Ohio State University, produced facts so conclusive that by 1927 the Engelhardts were able to write in their monumental volume on *Public School Business Administration* these words:

The school board of an efficiently managed school system recognizes the office of the superintendent of schools as the logical center where the re-

[1] United States Commissioner of Education.

[2] Deffenbaugh, W. S. *The School Board in City School Survey Reports.* Washington, D. C.: Superintendent of Documents, 1922. p. 131. (City School Leaflet, No. 2)

[3] Keough, William T. "School Board Organization in the Larger Cities," *American School Board Journal*, Vol. 65, No. 1, July, 1922. p. 39.

sponsibility for the professional as well as business affairs must be located. The business affairs of education should not deal alone with money, buildings, and equipment, but should be related very closely to the educational service to be rendered by the staff.[4]

In this controversy we have another example of an American tendency to put faith in administration rather than in men—a tendency born of the fear of autocracy. When our national Constitution was written, a system of checks and balances designed to enable any one of the three major divisions of government to check the others was provided, and governmental functions were themselves divided between State and Federal governments. Out of this beginning has grown our habit of thinking that when a principle is enacted into law the desired end has been fully accomplished. Wide open spaces and pioneer hardships had produced a hardy individualism which asserted itself. In recent years the operation of economic law has crushed this individualism in private business. As business has grown in importance, power has been centralized and men have been sought who could exercise great power for the good of the business. It is not so, however, in public affairs generally, although it is true that the struggle to apply business principles to government has led to the abandonment of the old system of checks and balances in municipal affairs and the substitution therefor, first, of a small commission and, more recently, of a city manager.

The rapid growth of American school systems both in number of pupils and in complexity of technical problems has led the taxpayer to consider the advisability of applying business principles to educational service. But in applying these principles, difficulties arise since school systems vary in size from those which employ one teacher to handle a few pupils with a budget less than that of the average family to those which serve metropolitan areas numbering pupils by the hundred thousand and spending money by the tens of millions of dollars. At a point in this scale, not yet definitely fixed, an executive officer or superintendent is needed. At first he discharges all the functions—administrative, clerical, supervisory—and what not, under the immediate direction of the school board. As his district grows, he will apply the practice of the business world and delegates to others, first, clerical functions and, next, administrative functions, reserving for himself, until he is able to share them with professional assistants, the responsibilities of supervising the instruction. Finally, in the largest systems the superintendent will find that he can be little more than

[4] Engelhardt, N. L., and Engelhardt, Fred. *Public School Business Administration.* New York: Teachers College, Columbia University, 1927. p. 5.

the technical expert in and chief co-ordinating officer of a staff which handles a big school organization.

Among those to whom responsibilities are delegated is an administrative official usually designated "the business manager." The question now arises: "What manner of man shall he be?" I venture to answer this question, in part at least. First of all, he should be an educated man. In the past, the chief business official has not always possessed this qualification. "Practically all," says Reeder, "have been catapulted into their positions from another position in the school system or from some position in industry."[5] Heer summarized his findings in these words:

> The median number of years of schooling beyond the elementary school, which these specialists have undergone, is five. Approximately one executive in three has spent four years in college. Very few of them have taken special courses in college or university—courses that are calculated better to qualify them to perform the functions of school business executives.
>
> The most prolific source of supply for such executives is the school system itself; thus, teachers, principals, and school clerks are frequently made business executives. Accountants and building contractors are also frequently given the positions in question.[6]

For many years some of our most successful industrial corporations have been employing only college-trained men in their executive offices. Recently I met on a Pullman train, a former pupil of mine who told me he handled certain personnel relationships for one of our great chain-store organizations. I was surprised to learn from him that college men were sought in this work. How much more then should we insist that the man who is to be a colleague of highly educated superintendents and a superior in rank and salary of principals and teachers should himself be an educated man!

As a second qualification, the chief business executive should have an educational point of view. Reeder says:

> Just as many superintendents of schools are deficient in their knowledge of business, so many school business executives are deficient in their knowledge of education; too many of the latter know too little of the aims of education and the means of realizing those aims. Moreover, too many think that business administration exists only for itself and that its fundamental purpose is to keep down expenses. A school business executive who does not have the educational point of view often becomes a positive handicap in carrying out an educational program; he often sees only materials and machinery and cannot envisage efficient citizens in the making.[7]

[5] Reeder, Ward G. *The Business Administration of a School System.* Boston: Ginn and Company, 1929. p. 40.

[6] *Ibid.*

[7] Reeder, *op. cit.*, p. 41.

This observation is applicable especially to larger cities where the volume of business to be transacted makes plausible the argument, "put a business man in." A note of warning was sounded by Fred M. Hunter at the Boston meeting of the Department of Superintendence:

Business and financial interests of a city are always concerned with school patronage. Their main purpose is to conduct their respective businesses for a profit. This is natural and laudable. Sometimes, however, they intrigue to influence school expenditures unduly and to control school moneys. This invariably results in waste and extravagance, and the children of the schools "pay the bill."[8]

Another reason for insisting that the business department be educationally minded is given by the Engelhardts. They write:

Every change, whether it be in methods of teaching, the classification of pupils, or the size of class to be taught, will have a direct bearing upon the business management of the system. The business office must be constantly on the alert, every administrative device and practice must demonstrate its value in terms of the services rendered.[9]

The ideal business manager then will have framed in his mind if not over his desk a principle very well stated by Dr. Thomas E. Finegan in a report to the Department of Superintendence in 1926:

The purpose for which a school system is maintained, the great objectives in education, the educational needs of a community, the accomplishments of the schools, these are the factors and elements which should dominate in the final decisions pertaining to education. The emphasis should be placed upon *education* and its *professional* administration and not upon *financial* and *business* aspects of administration.[10]

The chief business executive should also have special training for his job. In a paper read before the Pennsylvania State Association of School Board Secretaries in 1926, Secretary Decker of the Altoona Board said:

We find many school superintendents . . . taking courses in school business administration, while only a few school business officials take them.

. . . . . .

Just as in earlier years the professionally trained superintendent was needed to supplement the time and ability of the board, so the present

[8] Hunter, Fred M. "Efficient Expenditures of School Moneys," *Proceedings of the National Education Association.* Washington, D. C.: National Education Association, 1928. p. 714.

[9] Engelhardt and Engelhardt, *op. cit.*, p. 30.

[10] Finegan, Thomas E. "Report of National Commission on Economy and Efficiency of the Business Administration of City School Systems," *Proceedings of the National Education Association.* Washington, D. C.: National Education Association, 1926. p. 762.

requirement is that there shall be highly trained and capable specialists in various lines of administration to supplement the superintendent's ability, time, and authority even as he himself supplemented the board. May we not safely take the position that school business administration is the very chief of these special lines?[11]

Such responsibilities as cost accounting; auditing, payroll procedure and accounting; budgetary control of expenditures; purchase, storage, and distribution of supplies; maintenance, operation and insurance of plant are all primarily business functions for which special training is now provided. This has nowhere been better stated than in the report of Doctor Finegan to which I have already referred.

> There are certain definite fundamental principles underlying the successful administration of a public school system which are as fixed and immutable as the economic and fundamental principles which govern and control cost sheets, price lists, and dividends in any great commercial or industrial enterprise. The failure to observe and strictly adhere to these principles in educational procedure and administration will be as disastrous to real achievements in education as the violation of sound economic and business principles will be to financial aspects and profits in affairs conducted for monetary rewards.[12]

There is no valid reason for a school system accepting a man of lesser training than a private corporation can obtain for similar work and salary.

The fourth qualification is that the business manager must be alert to business progress. He should belong to organizations of business men and should read business journals. Only by these contacts can he bring into the school executive offices the best practices of the business world. Frequently much money can be saved without loss of educational efficiency by adaptation of these practices. For example, toward the close of the war, the need for conserving rubber led to conferences in which tire manufacturers agreed to a reduction from 287 styles and sizes to 32. The work of Mr. Hoover as Secretary of Commerce from 1921 to 1928 in urging standardization and thereby reducing waste is too well known to require discussion here. Who is to keep the school system in touch with such movements if not the business manager? Who is to bring to the superintendents' council suggestions for standardization in our work if not this same official? In all school systems the sizes and qualities of paper can be reduced to a very few types, thereby enabling the district to obtain the

[11] Decker, W. N. "Relations of Business and Educational Departments in Local School Districts," *American School Board Journal*, Vol. 72, No. 4, April, 1926. p. 51.
[12] Finegan, *op. cit.*, p. 762.

prices bid on large orders. A standard quantity of paper and other supplies can be worked out for each grade by committees of principals and teachers. Once this standard has been established the filling of orders within this amount may be intrusted to clerks. Only requisitions which exceed the established standard need come to the executives. In such a way the time of high-priced men is conserved. In co-operation with the superintendent, standards for school buildings and equipment can be developed which save large cities hundreds of thousands of dollars.

In the fifth place, the ideal business manager will possess in high degree that rather rare quality—sense of proportion. The educational viewpoint which has already been emphasized will help him see things in right perspective; his special training in making a careful analysis of school expenditures will show him where he can begin to effect savings, but a certain mental sureness and poise is necessary if he is to put first things first. The business manager who expects to make a record by drastic cuts in the modern school budget is doomed to disappointment. Regardless of whether he works under the superintendent or as his equal in rank, the chief item in the budget is for salaries of principals and teachers. In this the superintendent always has the control. The superintendent of one of our larger cities recently announced with pride, and I think rightly so, that the proportion of his district budget devoted strictly to instruction had moved steadily upward during his administration until it is now above the median percentage for cities. Superintendent Threlkeld, of Denver, has recently stated that:

> Any school system that has less than seventy-five percent of its current expense budget in the instruction item has something to explain, and any school system in which teachers' salaries constitute less than sixty-five percent of the budget has something to explain. This is true because this item so largely represents the real purpose for which the schools are maintained.[13]

The business manager who recognizes such facts will realize that the fields in which he can make drastic cuts are limited. Moreover, he will be less likely to view as extravagance additional assistance desired by the superintendent to study class-size and efficiency, to classify pupils, or to develop courses of study, for by such researches only can the returns on the school dollar be learned. As a result of such investigations, it may be possible to reduce instructional costs, or get better service for the same outlay or to obtain facts upon which to make a convincing accounting to the taxpayer.

[13] Threlkeld, A. L. "How the Superintendent Views the Business Department," *Nation's Schools*, 2:58, September, 1928.

As a sixth qualification, the business executive should be a first-class diplomat. He will be approached more often than will the superintendent by salesmen, insurance agents, and representatives of local business houses. It is within his power to win or lose for the school district the respect and good will of an influential part of his community. In general, the school business manager should be no less able than his friend employed by the gas company, the water company, the power company, or the telephone company, to deal with the public.

Moreover, in many cities of moderate size the business manager must serve also as secretary of the board. In a large district the secretarial functions may well be discharged by a clerk directly responsible to the school board. He will serve as minute clerk and as custodian of records and valuable documents. His signature on letters, contracts, and other documents will signify that these have been acted upon by the board officially. Through him will go complaints against the superintendent and his assistants together with final appeals from the superintendent's decisions. In cities of moderate size—perhaps fifty thousand to two hundred thousand in population—the business manager is compelled to act both as secretary of the school board, reporting directly to the board, and as business manager, reporting directly to the superintendent. In this capacity he often finds himself in the difficult position of keeping his left hand from knowing what his right hand is doing. Under such conditions the need for skill in diplomacy is emphasized.

In spite of the fact that some of you may think that my ideal is too high, if I were a superintendent of a city school system and had free rein in selecting a business manager, I should look for a man who is first of all an educated man; second, one who has an educational point of view; third, one who has special training for his work; fourth, one who is alert to business progress and can mingle with men in the business world; fifth, one who possesses in a high degree a sense of proportion; and sixth, one who is a first-class diplomat. If you charge me with avoiding the issue of whether there should be unit control or multiple control, I must answer that in my judgment all the objective data so far gathered as well as the leading theoretical arguments favor unit control, but that after all, I put more faith in men than in administrative devices.

Clinical Psychology

Impediments of Thought

Joseph Jastrow[1]

The subject or the title requires a word of explanation. The word "impediments" indicates why it is that in so many relations and on so many matters people do not think as efficiently, as correctly as they should. We have the phrase, "impediments of speech," that suggests that something interferes with a normal use of the speech functions. Similarly, one may say that we all suffer more or less—some persons more definitely than others—from impediments in thinking, and what I propose to do is to take you on a sort of excursion partly in abnormal psychology, partly through a survey of habits of logic.

Thinking is a process which is defined as follows: its purpose is to acquire truth, the right view of things, and the nature of this logical process is well worth investigation. It has its own psychology. If it were a question not of the human mind but of the plants, we would recognize the botanist as one who studies all the plants, their growth, and the laws of growth, while the florist is merely interested in cultivating those flowers which have aesthetic and attractive value. Well, the psychologist is like the botanist. He is interested in all varieties of thinking. To the florist, many plants are weeds, so to the logical thinker many forms of thinking are weeds; but to the psychologist weeds are as interesting as flowers and plants.

We need to think rationally and consistently for the purpose of reaching correct conclusions. What name shall be given to those tendencies to think wrongly? Francis Bacon, as well as Roger Bacon living two hundred years before him, has used the term idol, such as the idol of the forum, the idol of the theater, and other popular fallacies. A fallacy as a wrong way of reasoning was formulated by Aristotle, but his fallacies were a formal kind, which means that if you studied logic and did not use it right, you might commit fallacies. Francis Bacon turned attention to the study of how we actually judge and think, the fallacies due to our mental habits. Eventually in our own day, we introduced the clinical study of thinking, and that is why my title is appropriate.

[1] New School of Social Research, New York City, and professor emeritus, University of Wisconsin.

The psychologist finds out how people actually do think. William James was a pioneer in this clinical investigation of how people think. He chose one aspect of thinking for consideration in his book of *Varieties of Religious Experiences*—the very word "varieties" suggests that his interest was not in the truth but in the support of the religious systems proposed by individual thinkers.

Another approach is by way of intelligence tests. We have tests for every factor of intelligence in terms of complexity and difficulty, what we should study is the far more interesting psychology of stupidity. It is an exceptionally democratic quality and is responsible for a great many difficulties in life. How many different ways are there of being stupid? What particular types of stupidity are there? That would be more illuminating than the intelligence tests, because there are more ways of doing the wrong thing than the right thing. Consequently, you have variety of intellectual experiences. This has been capitalized with a very remarkable result in a book written by a remarkable man, David Starr Jordan. He has put together a variety of specimens of the impediments of thought, of curious forms of thinking and beliefs; and he appropriately calls this book *The Higher Foolishness,* thus combining elaborate procedure with askew and misleading methods.

Incidentally this introduces the distinction between sense and nonsense. It takes a wise man to write good nonsense. *Alice in Wonderland* was written by a professor of mathematics. It takes a brilliant mind to write that kind of nonsense. Thus the deliberate distortion of sense sheds a side light on the impediments of thought. Similarly, "absurdities" have been introduced in the intelligence tests to determine what complex absurdities children detect and how early.

I can dwell but briefly on plain mental deficiency. The greatest reason why there is so much poor thinking is that so many people are poorly equipped for the process. You cannot expect to do good thinking if you have a poor thinking apparatus; and there is no cure for unintelligence. There is no substitute for brains. As Schiller puts it, "*Gegen die Dummheit kämpfen Götter selbst vergebens.*"[2] You cannot cure stupidity. It may be that "beauty is skin deep," but it is also true that beauty goes to the bone. It is similarly true that stupidity, though at times superficial only, is the basis of our entire mental make-up. Statistically a large impediment of thought is merely low-grade intelligence. Even average intelligence does not go very far.

The distribution of intelligence is interesting. Compare it with athletic and gymnastic ability. Any young man in the best of condi-

[2] "Against stupidity the very Gods contend in vain."

tion who can run one hundred yards in ten seconds flat is an extraordinary runner; but almost any physically sound young man can do it in twenty. If a person can run twice as fast as another, he is an enormously fast runner. If a person is twice as tall as another, he is a freak. But probably the intelligent man who has a first-rate mind is twenty or even a hundred times as intelligent as the average, however measured.

To return to idols or fallacies; neither term is quite apt or suggestive in indicating the actual tendencies to think falsely. The largest single factor in their production is the relation between feeling and thinking. Our emotions get in the way of thought. The reason why we do not think correctly is because thinking and feeling get in each other's way and must be reconciled. We know that the only reason we can think at all is that we have sufficient freedom from emotional stress to be calm. You cannot think under the intense emotion of fear. You cannot think rightly under anger; and the same is true of love. Strong feelings interfere with calm thinking.

To define man as a rational animal only indicates a tendency in that direction. What seems to be the main function of intelligence is in reality the second. The first is to control your emotions, the second is to solve your problems. In these days many of us have so many problems, so many complicated ones to solve, that naturally we must go through years and years of schooling merely to get the information and the necessary technique, so that we can find our way in this complicated world of ours. The first use of intelligence is to control the emotions; otherwise, on the basis of impulse and emotion, our behavior would not be effective. It might even be injurious, so the higher senses come to restrain it. The request "Do be reasonable" is an appeal to keep emotions down; it is one way of being rational. The highest form of rationality is the loyalty to logic in solving our objective problems.

This obvious interference of thinking with feeling confers insight as to why thinking rightly is so difficult an art. In the intimate psychological sense, feeling is the greatest impediment of thought. It may, however, also be a support. To think well, one must be interested in thinking. The emotional support of thinking is curiosity. Without that you would never investigate. All our mental processes require the stimulus of feeling. We need the emotions to support our intellectual life, we are bored because we have the interest to do something but find nothing interesting to do. People will do most remarkable things with their minds in order to avoid being bored; that explains the vogue of puzzles and similar mental stimulants.

The concluding step in all behavior is will. When will is applied to deeds it becomes action; when it is applied to ideas it becomes belief. This determination leads to James's phrase, "the will to believe" which is one of the great impediments of thought. What this means is that we are all more interested in conclusions than we are in premises. That is natural, only psychologists are interested in processes. The normal man is interested less in how we do things, than in what we eventually do. Lack of interest in processes tends to make one jump to conclusions, for the conclusion commands interest.

Thinking is an intellectual venture and thus uncertain in its outcome. In thinking as in traveling, you like to know your destination. If it is an agreeable destination you decide to think that way; this we call prejudice. We believe what we like to believe, through what James called the will to believe. The Freudians in due course explained that both in our actions and beliefs we show the same tendency to seek the pleasant and avoid the unpleasant. The same motive that affects conducts, affects belief. If developed, it leads to a "complex." Freud traces the same clues in little habits of mind, holding that even formal action involves a bit of personal motive. He illustrates by saying that he carried two keys, one a large old-fashioned one to his house and the other a flat Yale key to his clinic; he frequently finds himself taking out his house key to open the clinic but he never takes out his clinic key to open the house; the motive of which means that he would rather be at home than at the clinic. He suggests also if we forget one of several errands, it is the one we did not want to remember. Thus, feeling interferes with belief.

In one sense what is more responsible for false thinking than anything else is tradition; most people do not reach their beliefs by thinking but by acceptance. This applies particularly to those phases of life which weakly follow logic and strongly follow other interests such as politics. Few persons consider deeply why they are Republicans or Democrats or what the difference is between them. Such affiliations go by acceptance and tradition.

We now approach the abnormal side of these impediments and the type of mind which tends towards types of belief that are variant, peculiar, deviating from the norm. Among these we may speak of hysterical distortion of thought. Hysteria is an intensely emotional interest in conclusions and particularly in conclusions of a personal character. We, therefore, say that when people lose their heads collectively or singly under emotional stress, they become hysterical.

Yet of far larger consequence in impediments of thought, among those that affect most seriously the history of thinking as well as hu-

man history are the impediments of a different order, the issue of which is called fanaticism. Fanaticism is not hysteria, though both are forms of unreasonableness. It might be interesting to debate whether more unreasonableness is contributed to human thinking by men or women. Either side could be argued with even conviction, but the two brands are not quite the same; the essential type of fanaticism arises from a masculine failing. Its clinical parallel appears in paranoia. Paranoia leads to a distorted, eventually a deluded kind of thinking, yet even on the over-emphasis of a specific trend or train of thought, cherished out of proportion to its place in the scale of human interests. In a milder sense this distortion may become a complex, in still milder application, a fad. We all have urgencies within us which need expression. Baseball and football fans use these expressions to attain the zest of intense interest, and "fan" is short for fanatic. No person really interested in postage stamps thinks rationally about them, and every collector's material is only junk to the man collecting something else. The object is to get more value out of these pursuits than they are intrinsically worth. We deceive ourselves as to value to get a thrill. Where the same exaggerated test is applied to unusual systems, they may develop into the wild specimens collected by Dr. Jordan in his *Higher Foolishness*.

Even if we are completely logical in expression of our beliefs, we may in the rest of our thinking exhibit impediments of thought. When an investor looks at the quotations and then consults a fortune teller, or goes by the daily horoscope, that is an impediment of thought. There is at least the incongruity as much as though a man in medieval armor were driving a Rolls-Royce.

In this sketchy survey I have tried only to indicate from the various approaches the difficulties of thinking correctly, to illustrate how in history, in tradition, in movements, in beliefs, in varieties of logical experience, and in our personal relations, we all more or less suffer from impediments of thought.

The Repressed Environment

Esther Allen Gaw[1]

This is an attempt to show the social basis of mental health. Just as the unconscious mechanisms of emotional thought in the individual cause maladjustment, so unconscious group repressions also cause maladjustment in the individual. This is not a new concept, but it is the

[1] Dean of Women, Ohio State University.

thesis that Burrow makes in *The Social Basis of Consciousness,* and it is a suggestive, possible cause of social, as well as of individual tension.

The egocentric position is a familiar phenomenon in a neurotic individual. Here the person naïvely assumes that no other interpretation than his own one could possibly be maintained. Do we not also find the same position in groups? Cannot each one of us think of some group which assumes that its hypothesis is universal, that it cannot be challenged Must we not then call the group neurotic unless there is really universal acceptance of the hypothesis? As a comparatively harmless illustration of such group repression take the fact that nine years ago the principals and superintendents of the school system in a western state would not employ as teachers young women college graduates with short hair. Those men in authority naïvely assumed that there could be no other interpretation of the efficiency of short-haired women than the one which they were making. Fortunately, this was a short-lived neurosis. There are countless other attitudes accepted by one group or another, sometimes small groups and sometimes large groups, which show repressions analogous to neuroses. An individual who comes into conflict with such a repression will be apt to burst over, just as the individual will disguise his own personal shocks, fears, or what not by devious displacements.

On a campus we will find at least two kinds of repressed environments—one of the older people and another of the students. Both show the naïvely assumed attitude of absolute certainty. The adult groups are of many kinds—the parents, the faculty, and people of the state at large. The student groups are sometimes groups of men or women, sometimes housing groups, sometimes cross sections according to intellectual interests, with other numerous varieties. In any one of these we may find generally accepted ideas, usually born of ignorance and fear, whose repressions result in outburst in individual students on the campus. The repressions of the older people are more often allied with the desire to dominate than those of the students, but not invariably.

For this abstract I will illustrate from the student groups alone. We find such opinions as the following which conform to our definition, namely, they are assumed by the group to be undebatable:

1. "The faculty will fail a student if possible."
   This obsession may originate in the experience of the undergraduate who, up to this time, has found that older people are determined to dominate and will punish him in some way if unsuccessful in the domination. The result of the repression upon an individual student may easily be a rationalization of his own failure as a student.

2. "You must date every week-end."
   This belief may originate in the standards which assume that going to parties is a sign of social adequacy. It results in a distinct feeling of inferiority of those who do not make dates, and makes it almost impossible to form parties on Friday or Saturday night of either men or women alone. For instance, the women students who live in the various kinds of houses will leave their house for a movie or a walk rather than to experiment with spontaneous diversion at home on those nights.
3. "Clan-mindedness is justified."
   This universal opinion which would find no student to contradict it, whether the student were affiliated with a Greek-letter fraternity or not, arises from the assumption that it is right for any group to close itself to outsiders. It often results for those within the group in exhibitionism shown in extravagant parties and in innumerable individual excesses. It results in those outside the group, who are at the same time displaying the same repression as a group in over-compensation through the sour-grapes attitude. Or it may cause daydreaming in an individual, as he imagines how he can become the social success he longs to be, and may make it impossible for him to give proper attention to his study.

These repressed environments, the result usually of ignorance and fear, should not be confused with the legitimate inhibitions which must be a part of our social inheritance. There are desirable inhibitions; the history of man would show no progress without them. To be desirable, however, inhibitions should probably be imposed by each individual upon himself in the light of what he has been taught, rather than be superimposed upon him by a group. The world of emotional stability will be achieved not by social evasions and repressions, but by conscious teaching of the true meaning of beneficent self-inhibitions.

Helping the College Student Analyze His Difficulties

Emily L. Stogdill[1]

The first step toward the solution of the difficulties confronting the college student is to find out accurately just what those difficulties are. Teachers and administrative officers who are familiar with the experience of having a perplexed adolescent complain, "I am not getting along well in school and I don't know what is wrong," will recognize the need for helping the student to become articulate. We used to think the problem was to get a person to be willing to tell us why he had not studied or why he had broken a rule of the self-

[1] Clinician for Women, Ohio State University.

government committee, or why he had been dishonest. We are beginning slowly to realize that if the individual knew the real answers to our questions, he would not, in many instances, have found it necessary to resort to unsocial behavior to obtain satisfaction for his inarticulate personal and emotional needs.

The solution of the matter lies not only in clinical psychology but in education. Whenever an individual attempts to define his own problem, he is making use of diagnosis. Obviously, his diagnosis will be based on his knowledge of what a person could have wrong with him that might result in the sort of behavior that he has been showing. "I guess I must be a moron" is the conclusion arrived at by more than one of our university students who, having made reasonable grades in high school, somehow fail to pass their college requirements. They seem to experience a genuine emotional relief when the nature of moronity is fully explained to them in such a way that they see that they could not possibly belong in any group of mentally defective persons. Lack of knowledge such as this can be remedied in group fashion. Similarly, the much overused terms, "inferiority complex," "parent fixation," "kleptomania," "pervert," confuse and actually injure the mental health of individuals to whom they may be applied by well-meaning friends with a smattering of psychological terminology gained from popular reading.

Only when the student participates in his own education can he truly be said to be making progress. In evaluating education as we are attempting to do at this conference, we have repeatedly come upon the terms motivation, individual differences, curricular construction, preparation for life, and other similar concepts. My criticism is that education in the past has done too much for the student and not enough with him. The activity of our teachers has been helpful to their own education. If the method of participation could be extended to the student, he might also share in the development.

Commercial Education Appraised by Industry

Joseph B. Hanan[1]

The attitude of industry toward the commercial graduate is one of sympathy and willingness to help. Industry realizes that it must make a certain investment in every young employee before a profitable return can be expected. But as a basis for that investment, it expects these young people to bring with them certain qualifications such as: good training in the fundamental subjects; recognition, appreciation, and practice of the primary virtues; imagination and some vision; ability to think and analyze; painstaking attention to details; a sense of responsibility; dependability and loyalty; and the right point of view or outlook on life—a proper perspective.

Four people in a position in industry to pass on the subject were asked this question: "What, in your estimation, are the most pronounced shortcomings of commercial graduates?" Their replies are given verbatim. You can draw your own conclusions as to how well the expectations and needs of industry are being met by young graduates.

From a man employer:

They lack in knowledge of the fundamental subjects—arithmetic, spelling, English, penmanship. They are better qualified in shorthand and typewriting than they were a few years ago. I doubt if we are getting the best students. The best ones seem to be going to college. Their attitude, however, is improving. Their abilities vary widely with the different schools from which they come.

Here are a woman employer's answers:

Woefully lacking in their knowledge of fundamental subjects, especially mathematics and English. They seem to have no realization of what getting a job means. They have no idea of what a business attitude should be—they act as though they were going to a playground, especially noticeable when they are in groups. We have to teach them how to conduct themselves—they are lacking in a sense of responsibility.

A prominent manager gave his views as follows:

They do not have the right viewpoint. They are just putting in time. They do not look upon their jobs as a privilege and an opportunity. They

[1] The B. F. Goodrich Company, Akron.

are not trained to think in terms of modern business requirements. Few graduates have any idea how to plan or co-ordinate their work to get the most effective results. Schools do not teach the organization of modern business.

Another man well up in our company but still young, as are all those who were interviewed, expressed the following opinion:

The greatest need of industry today is for employees who can break down facts into their elements, who can analyze, and reason from cause to effect and from effect to cause. Our schools are not teaching pupils how to do this. Schools should give more abstract problems. Schools are not teaching pupils to think in terms of the elements of business.

It would appear from the foregoing that the schools still have a considerable job to do. I believe Dr. Nichols of Harvard has made a most valuable contribution to the problem in his book *A New Conception of Office Practice*, published by the Harvard Press. Those of you who would like to get a close-up view of this modern business, about which all these persons talked, may well read *The New Way to Net Profits*, by Vice-President Shibley of the Bankers Trust Company, which is published by Harpers. Finally, bear in mind that industry is ready and willing to help all it can because it is from the schools that our future managers and executives will largely come.

An Appraisal of Commercial Education

J. O. Malott[1]

The contributions of commercial education to the social and economic development in this country are so intricately related to the contributions from education in general, science, and the natural resources that they cannot be accurately measured. Millions of boys and girls, and men and women, have pursued commercial courses and found vocational opportunities in business. These same millions have contributed much toward meeting the social and business needs of their communities. As for the present and future, there are definite social and business needs to be met. Some of these needs are more obvious and more easily measured than others. Only in terms of these needs can either our objectives be stated or the program appraised.

The term "commercial education" is used to include that education and training which prepares specifically for an understanding of the relationships and performance of activities in business. The

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objectives, and hence the program for commercial education, should provide not only for entrance into, but promotion in, the various occupational levels in business. The breadth of training for the higher occupational levels may be practically co-extensive with education and human endeavor. The ultimate success of the vocational aspect of commercial education can be measured in terms of occupational efficiency as evidenced by satisfactory initial employment, regular or normal promotions, a high degree of morale, and increased efficiency of the business unit. In other words, the extent to which the outcomes of commercial education are coincident with the quantitative and qualitative requirements for initial and promotional opportunities in business is in itself a pragmatic appraisal of commercial education.

There has been much confusion about the objectives of commercial education and the terminology used. The commercial curriculum embodying commercial subjects prepares, as should other secondary curricula, for the activities of life including the commercial occupational activities. The seven cardinal objectives should be met, and the vocational should be emphasized. The commercial curriculum should in this sense have objectives comparable to the objectives of any other secondary curriculum. The contribution of the vocational subjects in the commercial curriculum should be comparable to that of the special subjects in other curricula in that they form new and unifying experiences and that business is a social institution. The preparation of all, however, to be intelligent and appreciative consumers of the services and products of modern business is the objective of the business content in the social sciences which is designed for all pupils. Those additional bodies of knowledge, attitudes, and skills found necessary or desirable in business occupations are, or should be, included in the commercial subjects which are designed for those preparing to enter business positions. These subjects constitute a supplement to other subjects in the curriculum, for they are terminal or finishing subjects with job objectives. Dependent upon the pyramiding of the jobs for which preparation is offered the courses may, or may not, be requisite to other courses pertaining to higher occupational levels in business.

It is true that the commercial subjects are rich in non-vocational values, and students may pursue them with varied objectives, for these subjects may contribute to social-science, vocational guidance, and general educational objectives. It is true, also, that some of the so-called business skills are rapidly becoming social skills. Furthermore, just as long as social sciences do not contain sufficient business

content to raise satisfactorily the standard of everyday business contacts in the consumption of the products and services of business, such content may be expected from commercial subjects. Until properly appreciated and satisfactorily met, the marginal responsibilities for the organization of such a content must rest as heavily upon the social-science group as upon those responsible for definite vocational education. Although educational commissions have frequently raised the problem of this responsibility for content, failure to solve it is retarding the development, both of definite commercial education in the vocational sense, and general business education in the social sciences.

It is the consensus, however, that in the meantime, the primary vocational objective should determine the content, organization, and standards of achievement in the commercial subjects. Practically a million students are preparing for business positions, and the follow-up studies show that high percentages of those who pursue business subjects enter business positions. Also, the vocational efficiency of those in business positions determines to a large extent their vocational and social happiness, and contributes to the economic efficiency of the community. The most efficient methods that have been developed for attaining the non-vocational values are those that have been developed for realizing the vocational objectives. It is generally believed that the occupational careers of those who have made definite decisions regarding vocational intentions should not be jeopardized by those who are still uncertain.

SUPPLY AND DEMAND

For a general concept of the quantitative needs and of the increases in these needs we can turn to the United States Census Reports. In 1920 there were over seven million men and women gainfully employed in the clerical and trade or mercantile occupations. These seven million represent an increase of more than two million, 38 percent, over the number gainfully employed in these occupations in 1910. An analysis of the increases in the respective kinds of clerical and trade positions reveals the following outstanding facts: The number of stenographers and typists increased from 316,000 in 1910 to 625,000 in 1920; the number of bookkeepers, cashiers, and accountants increased from 486,000 to 734,000; and the number of clerks, excluding those in stores, increased from 720,000 to 1,487,000. In these groups of occupations there was an increase of approximately 1,300,000 workers. Although the increases were extensive in some other clerical and trade occupations, it is to be noted

that the entire group of clerical positions increased from 1,737,000 to 3,126,000, an increase of 1,383,000, or approximately 100 percent during the ten years. Considering the large number of clerical and trade positions, the turnover, the normal increase, and other factors, it would be conservative to estimate that business absorbs annually one-half million office and store employees.

During the period from 1910 to 1920, the number of pupils and students enrolled in the commercial curricula in the different types of schools increased from less than one-fourth to two-thirds of a million—an increase of more than 150 percent. Data gathered during the past year indicate that enrollments in commercial education are continuing to increase rapidly.

These data show that approximately twice as many women as men are enrolled in the commercial curricula in the secondary schools; that six times as many men as women are enrolled in these curricula in the colleges and universities; that the highest percentage of increase in the enrollments, namely 410 percent, was in the colleges and universities; and that the greatest increase in numbers enrolled was in the public secondary schools. There is no definite assurance that too many or too few are being prepared for business positions. However, there is definite assurance through follow-up studies and periodic surveys of local commercial occupations that sufficient training is not provided for salespeople and various types of clerical workers.

ORGANIZATION

An adequate appraisal of commercial education should consider the extent to which the organization and practices in this field comply with modern theses of education. Two well-known theses of Dr. Thomas H. Briggs are: The first duty of the school is to teach pupils to do better the desirable and worthy things they are likely to do anyway; and the second duty is to arrange the content so that it will be of maximum value to the extent to which pupils pursue it.

The first thesis requires the making of occupational surveys and follow-up studies to learn what are the occupational activities of students who leave before graduation as well as those who complete the course. An increasingly large number of such studies have been made annually during the past fifteen years. Some of the studies have been more comprehensive and more carefully conducted than others. Enough of these studies, however, have been made to enable one to appraise the appropriateness of current programs for secondary commercial education.

One of the great contributions of these studies is the distinction between junior and senior commercial occupations. These investigations have removed the vagueness regarding commercial occupations. They have provided a fact basis for the organization of commercial education in the junior and senior high schools. As a result of the occupational surveys we have an increased obligation to apply the second thesis. It implies that the content should correlate with the initial and promotional opportunities in office and store positions. Only those subjects appropriate for the junior high school should be taught therein. A recent survey of commercial education in the junior high school shows that less than one-half of the junior high schools offering commercial subjects comply with the second thesis of Dr. Briggs.

The junior commercial-occupation surveys have been outstanding factors in the development of commercial education in the junior high school. Various attempts to revise the curriculum in these schools have led to the introduction of senior high-school textbooks, curricula, and subjects which were taught chiefly by commercial teachers from the senior high schools. A second influence is shown in the attempt to adjust the content and variety of senior high-school subjects to the junior high-school level of instruction. A fused type of introductory course in general business information and elementary office practice has also been developed in harmony with the objectives of the junior high school. The junior high schools are passing through these stages concurrently.

An appraisal of commercial education in the junior high school would be incomplete without calling attention to some of the reports that give direction to improvements. "The Junior Commerce Curriculum" in the *Fourth Yearbook of the Department of Superintendence,* National Education Association, and "Commercial Education in the Junior High School" by James M. Glass, in the *Balance Sheet* for September, 1926, have been most effective in calling attention to the objectives, content, and organization of this work.

The senior commercial-occupation surveys have demonstrated the need of definite preparatory and extension training for a larger number of office and store positions. Particularly they have given direction to the organization of salesmanship and clerical-training courses. They have demonstrated the need of co-ordinating senior vocational courses with senior employment opportunities. They have revealed conclusively the changing and advancing requirements of office and store positions. They have shown the need and have given direction to the organization of courses varying in length for

undergraduate, postgraduate, and evening-school courses in business. They have provided data for the purchasing of classroom equipment.

Another major contribution of the commercial-occupation surveys has been that of giving direction to the content of the courses. This has been done in a rather elementary way through the significance of job titles. The lack of standardization of office work generally and the lack of uniformity of job titles limit the use of such data in course of study revision. Such data facilitate the organization of related work within a given curriculum.

Although relatively large numbers of schools have not applied the findings of commercial-occupation surveys to the organization of this phase of education, a few school systems have made much progress in the next major step, job analysis. Job analysis is the logical outcome of a commercial-occupation survey. Not only should we know the job titles of what our students who did not complete the course are doing, as well as the occupations of our graduates, but in order to arrange the content of our course to the best advantage of all students we must have detailed analyses of the duties of the various levels of business positions.

Job analysis in the development of commercial education is more difficult than the previous tasks. Fewer workers are trained in the technique of it; and comparatively few contributions, therefore, have been made. Outstanding books dealing with this subject are: *Analyses of Secretarial Duties and Traits* by W. W. Charters and I. B. Whitley; *The Commercial Curriculum* is an analysis of the work of stenographers by Frank Kyker, of George Peabody College for Teachers; *The Tentative Course of Study for Bookkeeping,* which is based upon an analysis of the work of bookkeepers in Cleveland, is published by the Board of Education; *Bookkeeping Duties and the Commercial Curriculum,* which is an analysis of the duties of bookkeepers, is written by Benjamin Strumph of New York University; *Course of Study in General Clerical Service* is an analysis of general clerical duties also published by the Board of Education, Cleveland, Ohio; *Personnel Research in Department Stores,* an analysis of the duties of salespeople, buyers, and executives in department stores; and *A New Conception of Office Practice,* which contains an analysis of some clerical positions, is published by Harvard University Press.

The job analyses that have been made are pioneering efforts directed toward greater definiteness in business training. To date they have had comparatively little effect on the selection of content or instruction in the various fields. The full appreciation of these

studies has not been realized. Little effort has been made toward applying the findings in the revision of courses of study. The lack of appreciation of the studies and the failure to recognize their significance are shown by the comparatively small circulation of these studies. The average classroom teacher without business experience and with little experience in applying the results of research finds it difficult to make use of such contributions. Nevertheless, those who have conducted such studies deserve our greatest praise. The most of this praise must remain in Ohio. You have Dr. Charters at this university and W. L. Connor, W. L. Moore, Lloyd L. Jones, and others in Cleveland also have made excellent contributions.

Many of the larger business firms have developed job sheets and analyses of various office and store positions. All of this material is urgently needed by those responsible for research regarding the course of study and the preparation of commercial-education programs. Closer co-operation between commercial firms and commercial teachers and the free exchange of information regarding the requirements of certain jobs, acceptable office standards, desirable personality traits, and other factors are needed. In fact, the application of job analyses in the schools will probably depend upon closer co-operation with the men in charge of business concerns in which such analyses could be made, tried out, and verified in actually reliable practice.

Although commercial education is slowly passing through the step of applying the findings of commercial-occupation surveys and has hardly entered the stage of job analysis, at least a third stage of development becomes obvious. It is not enough to know merely what duties are required in various levels of different office and store positions; it is essential that we know the quantitative and qualitative standards of performance of each of these duties. The efforts on the part of business men to lower the cost per unit of production in the offices are gradually resulting in the establishment of production standards. One large company permits a maximum error of one-tenth of one percent in filing. Another company has established as a weekly standard four thousand lines of transcription per week. The number of published standards is increasing. An expression of one idea back of this development has been stated thus: "Experience, analysis, and study have shown conclusively that in principal, a group of twenty-five transcribing machine operators is no different from a group of twenty-five factory machine operators."[2] The

[2] MacDonald, J. H. "Bonus Plans for Office Workers," *Management*, 31:50, August, 1928.

office managers and others are figuring office costs just as factory costs are figured. The following quotation contains such a summary:

> A survey made by a Wall Street bond house to discover how much time stenographers were wasting disclosed the fact that in one month 40 percent of idle time was recorded. . . . In several firms much more than 50 percent of the total time was lost.
>
> Again, in a Chicago bank a study of the work for one week of 25 stenographers showed that they averaged but five letters a day each. . . . in the office of a New England manufacturer, where 30 stenographers had an average daily output of four and one-half letters each. . . . the "dub" in office work cannot produce one-quarter as much as a first class clerk. . . .
>
> The first step of scientific management as applied to the office is the determination of its needs. . . . The second step is an inquiry into the methods being used to accomplish the necessary results. This demands careful study also, but yields most remarkable returns. . . . Teaching and training the workers to use the new methods is the third step. Training in office work is almost unknown, despite the recognized fact that a trained worker can produce several times as much as an untrained one. . . . The final step is to develop control methods which will enable the manager to secure the results he desires. Office control is, in fact, analogous to factory control.
>
> Finally, let us glance again at the condition shown by conservative statistics: There are now certainly more than 3,000,000 office workers in the country, and experience shows that few offices are 50 percent efficient. The average annual salary of a clerk is undoubtedly not less than $1,200 and this means—for 3,000,000 people, a low figure be it remembered—an annual pay-roll of $3,600,000,000, which works out as a daily expenditure of $12,000,000. With 50 percent efficiency, this denotes a daily wastage of no less than $6,000,000. If but one-half of this sum could be recovered, it would mean a daily saving of $3,000,000—an amount that should convince any operating official that it was highly worth while to put his minor office problems in competent and authoritative hands.[3]

Mr. Leffingwell's article, some bulletins of the American Management Association, and similar types of articles should be read by commercial teachers. Although some of the concepts may seem extremely different from our traditional concepts of office requirements, they should be given most careful consideration. More efficient management of office and store personnel will force an improvement in our guidance, training, placement, and extension programs and the standards of achievement in the vocational courses.

In conclusion, greater efforts should be directed toward developing a balanced and continuous program for commercial education.

[3] Leffingwell, W. H. "A Neglected Business Function that Wastes $6,000,000 a Day," *Magazine of Business*, 55:549, 576, 579, May, 1929.

Constant revision of the curricula based upon first-hand knowledge of the needs is necessary to prepare pupils for the changed and changing requirements of office and store positions. The development has been retarded by mere juggling of the courses, imitation, and tradition. A study of the efforts in adjusting commercial education to the needs reveals the stages of development through which this phase of education is passing concurrently: The first stage in which the traditional curriculum and traditional subjects are taught generally by teachers without much business experience or professional training; the second stage in which the findings of commercial occupation surveys are applied to the extent that the justifiable training is co-ordinated with initial and promotional employment opportunities; the third stage in which the findings of job analyses are applied to courses of study revision; and the fourth stage in which acceptable office standards for the various occupational levels are made the finishing standards in school.

A satisfactory solution of the many vital problems not only in instruction but in guidance, placement, teacher training, supervision, and other important factors must await the development of job analyses and the application of the findings of research and the best educational practices. It is only fair and just to say that much progress has been made toward putting commercial education on a factual basis and that new developments are rapidly approaching from the horizon.

Present Practice in Commercial Education

Charles H. Lake [1]

In the excellent talks that we had this morning there have been raised a number of questions that should concern us as professional educators. We have been criticized for not turning out a uniform product from our school as measured by the work that the world wants done. We welcome the criticism. It is just, in so far as it goes, but it does not include all the factors which must be considered. All courses offered in the public schools should be justified on the basis of developing an ability in the individual which society can use profitably. This, of course, can mean the development of a wide range of abilities. It includes a testing of the individual to determine what abilities he may have which are worth developing to the point where they may be of positive benefit to society.

[1] First Assistant Superintendent of Schools, Cleveland.

Granting all this, the schools cannot perform the whole task. Education is a continuous process, and the product of the schools cannot be compared with the product of a tire factory. The tire comes from the machine as a standardized product and immediately begins to depreciate. The graduate of the commercial school comes out, not as a standardized product but as a product which should continue appreciating for years in the right sort of environment. Business will have to co-operate and co-ordinate with the schools in solving the problem.

Each person graduating from a commercial high school should have a certain background of training gleaned from subjects which may be classified as cultural, and in addition have developed certain skills which industry can use. Just how shall we get this balance between cultural and vocational offerings in our commercial schools? Certainly as many persons fail to accomplish satisfactorily in life because of social deficiencies as for lack of training in some specific skill. It is important to get along with people. Shall the schools attempt to do something in this field? Most assuredly they should. The schools then must work with the entire range of abilities of the individual—intellectual, physical, and social—and attempt in the short time that these young people are in school to give them the best material in the way best suited to the development of each individual.

The possibilities in commercial education have been but partially realized by the professional educators, and we are still debating such questions as: Is not the best place to teach commercial work in the cosmopolitan high school? Cannot commercial work be done satisfactorily in the academic school, or will it be done best in special commercial schools?

Public-school commercial education is a relatively new field. It has been but a few years since the superintendent of schools sought the product of the private commercial school when he wanted a clerk or secretary. The progress during the past fifteen years in commercial training in the public secondary schools has been marked. Educators are giving a great deal of attention to the development of a program so balanced that it will meet the best interests of the pupil and of society. We have a definite amount of time for these young people. What skills and what training can we give them consistent with their individual interests and the interests of society?

Until recently, the commercial course was sort of an educational wastebasket which some school administrators thought was almost necessary. If pupils could not do algebra, they could try commercial arithmetic. That day is over, and we are now asking ourselves just

what intelligence is necessary satisfactorily to do certain kinds of work that the commercial world wants done, so that we shall not waste a lot of time in our schools trying to train pupils to do things that there is no hope of their doing successfully. We are just making a beginning here, and I predict that we shall make progress rather rapidly. If education is to be democratic, we shall have to conserve educational opportunities for those who have the ability to take advantage of them.

County Superintendents

Evaluating Education by Rural Needs

C. L. Rhoade[1]

The school as an institution developed in response to definite needs of society. Rapid changes are constantly being made which affect the life of the people. Professor O'Shea, of the University of Wisconsin, stated in an address several days ago that there has been almost as much progress in the last twenty years as there formerly was in twenty centuries. Fred High, of Chicago, recently remarked in his characteristic way that in these days we must run "like the dickens" to keep standing still. This means that the school must make rapid adaptations to answer the changing needs. There is danger that traditions, school methods, and customs of the past may serve as rust and moss to retard the work that is to be accomplished.

President Frank, of the University of Wisconsin, several years ago addressed the Indiana State Teachers' Association on the startling subject, "America and the Evils of Institutionalism." He explained how ever ready the American people are to discover the need for new institutional machinery and immediately proceed to set up organization machinery, but in many instances, when it is set in motion, it begins to run away from the original intentions and proceeds to enslave its founders and supporters. It is possible that in the school in some aspects this may be happening. It is essential that those in positions of educational responsibility should be ready to study the needs of the ever-changing adult and community life in order that they may make the necessary changes to meet present-day needs.

The work of the county superintendents has to do largely with the education and training of rural people. He has a position of trust and great opportunity to render service. Counties, like individuals, have local distinguishing characteristics. No one has a greater opportunity to make an indelible impression upon the future achievements of the county than the superintendent of the county's schools. His progressive educational policies and his enthusiastic effort will help mold the future success and destiny of those in his school system. Fortunate is the county whose school-administrative leader is free from political clubs swinging about his head and in a position to

[1] County Superintendent of Schools, La Porte, Indiana.

perform his duties without dictation from political bosses. Fortunate also is the county whose superintendent plans and promotes definite objectives.

Every activity, even though it may be routine detail, should contribute to some well-planned purpose. Many times workers in a system fail to see the sum total result of which the individual contribution may only be a small part. The story of the stone cutters may illustrate. A traveler came to the scene of a large number of men chiseling and shaping stone. He observed that there was a difference in the way they did their work. He stepped up to one, who was working away in a heartless fashion and said, "My friend, what are you doing?" The workman shrugged his shoulder and said, "Can't you see, I'm cutting stone," and that was as far as his interest or vision extended. The visitor stepped up to a second, who seemed somewhat more happy in his task and again asked, "My friend, what are you doing?" This man shrugged his shoulder and said, "I am a stone cutter by trade and I am earning a living for my family." The inquirer stepped up to a third workman, who seemed very happy and delighted in his work, and asked him the same question. This man raised his head with a smile of satisfaction and said, "I am building a temple." This man had a big vision of the results of his work. With a far-reaching vision of this type, the individual efforts of the school personnel will co-ordinate in the achievement of success approaching the ideal.

It is important that a rural-school leader should know rural life and conditions. With personal experience in country life he can gain the confidence of his rural leaders and with their assistance intelligently make adaptations to local needs. One of the great assets in school-administration work is co-operation from the patrons. Receiving advice from those in adult life many times brings a splendid backing. After gaining this co-operative background it is essential that the leader should get the latest and best information about advance steps and by tactful methods have new steps in school progress backed by local progressive individuals and organizations. It is very essential that the county superintendent should know rural life and rural problems. In order to get the confidence of rural people, a background of personal experience in the country is a great asset. The city-bred administrator many times fails to understand farm people, and they likewise are skeptical of his ability to meet their needs. If he can gain a position of confidence, he can introduce the latest and best educational ideas and methods by working with local communities and allowing the people to assist him. Rural peo-

ple are slow to accept educational edicts saddled upon them if there is not a tactful co-operative method of introduction.

Everyone understands that there is a rural problem. At the last election campaign much was said about the farm crisis. The failure of banks in rural communities and the great unrest of farmers indicates that some solution should be found. The special session of Congress indicates that there is need for some rural relief or adjustment. Before discussing remedies, it is well to consider the causes of the unsatisfactory rural conditions. In a questionnaire sent to two hundred farm leaders in our county, the following was the summary ranking of causes for present rural conditions:

1. The failure of farmers to co-operate effectively
2. Inefficient rural organizations
3. Unsatisfactory marketing system
4. Lack of agricultural and home-economics training
5. The use of poor business methods on the farm
6. Organized labor influences
7. Insects, pests, animal diseases
8. Excessive taxes
9. Increasing number of luxuries
10. Too many out-of-date methods
11. Inadequate school education
12. Too many farmers
13. The absence of old-fashioned virtues

After considering these suggestive causes, it is well that we try to find remedies. A short time ago I asked a business man, who has had a broad experience with farmers' problems and who has made some study of present conditions, how the present rural problems could be solved. His reply was, "If I could answer that question, I would tell President Hoover." In the questionnaire referred to above, the tabulation shows that our farmers are placing the remedies in the following order: (1) co-operation, (2) education, (3) better business methods, (4) legislation, (5) more industry and thrift, and (6) corporation farming.

The school has been and still is called upon to help accomplish national objectives. In times of conflict the school is called upon to help win the war. In times of peace it is asked to promote the cause of peace. The school played its part in helping to solve the anti-slavery and the prohibition questions. In the same way it may be possible for the school to render its assistance in solving our present debated farmers' problems.

The rural school unfortunately has many handicaps, which hinder the promotion of an educational program in keeping with rural

needs. In many instances it is difficult to secure teachers especially trained for rural teaching. In our state of Indiana much progress has been made, but we still find it necessary to use many teachers who do not thoroughly understand rural-school needs and who are merely teaching in the township schools as a stepping stone to get into a city position. Another handicap is the lack of adequate supervision. In La Porte County we are fortunate in having a supervisor of health, one for art, one for home economics, and several for vocal and instrumental music.

At the time of introducing these supervisors, there was some feeling in the county that supervision was too expensive and not necessary, but now that the success of the work in these various departments under supervision is evident, the people at large are convinced that worth-while results are being accomplished, and I am sure myself that supervision is a solution for effective and efficient work. The lack of consolidation in certain sections is another handicap, which progressive leadership can help to overcome. The one-room school served the purpose in its day, but under the present-day rural needs it has become inadequate. With the short periods for recitation there is too much danger for the condition suggested by the little boy who said that while at school he many times "sets and thinks and many times he just sets." Another little boy when asked what he liked best about his school said, "Going home." Rural communities need schools adequately equipped which offer as much opportunity as the schools in the city.

One of the high-school rural problems is the revision of the courses of study adapted to the rural need. The State of Indiana, as well as other states, is putting forth a great deal of effort to rebuild the high-school curriculum on a basis of more practical and effective results. As Dr. Clifton suggested, the consolidation of small high schools will be one of the future aims and will result in removing the handicap of small-township corporations trying to finance an adequate high-school plant.

Some of the other rural handicaps are the lack of finance for vocational work, the difficulty of providing classes for subnormal children, the difficulty of maintaining high-attendance standards, and the limited length of school term. We have a school term of eight and one-half months now in our county and are trying to lengthen that to nine months. People realize they have to pay for the school and many times, unfortunately, they hold back just a little; but in consideration of the times, I think our people in the rural districts have been sincere and loyal where they have been sold to the value

of good schools; and they are willing to pay their own hard-earned money to support the school for the training of their boys and girls.

In our county questionnaire I would like to call your attention to the fourth item, which has to do with the subjects of our elementary schools. The result from this questionnaire shows that the rural people in our county would place first, reading; second, arithmetic; third, writing; fourth, spelling; fifth, physiology and health; sixth, history and civics; seventh, agriculture; eighth, geography; ninth, art; and tenth, music.

Also in this questionnaire the relative importance of our high-school subjects, item five, is as follows: first, business arithmetic; second, English and literature; third, health; fourth, vocational agriculture, cooking and sewing; fifth, citizenship courses; sixth, government; seventh, general science; eighth, American history; ninth, physical training; tenth, biology; eleventh, manual training; twelfth, geometry; thirteenth, algebra; fourteenth, physics; fifteenth, American social problems; sixteenth, commercial geography; seventeenth, European history; eighteenth, foreign language; nineteenth, art and home economics; and twentieth, music.

Now, just considering the rural problem from the view of rural needs and looking at the remedies that have been suggested in our questionnaire, there are three things that I would like to stress. The first one is that we need to prepare our rural boys and girls for personal efficiency. If we could find some ideal successful rural citizen, a farmer, we will say, and could find in that one individual just what we need in order to solve the rural problem then, of course, we could dissect his characteristics and try to build up those characteristics in the boys and girls. I do not know whether any of you could find such an ideal citizen who has all those characteristics. In fact, I presume there is no such, but, as we study different individuals, we find that they differ largely in individual efficiency. We find one farmer who is comparatively successful. His buildings are well kept up. He seems to be making some money. He takes care of his family. On the other hand, very near him there is a man, another farmer, who is an utter failure. He is losing out. Of course, the hope of many is that legislation will make everyone prosperous. Just recently I talked with our county-agent leader for the State of Indiana. I asked him, "How are we going to solve the rural problem?" He answered in this way: "There is no hope for the *poor* farmer." Now, he did not say, "There is no hope for the poor *farmer*," but "There is no hope for the *poor* farmer." In other words, there is no hope for the inefficient farmer.

Take, for instance, the dairy business. Our county is a dairy county. Some men are feeding cows and trying to produce milk, but if they were to keep records, they would find they are doing so at a loss. They help to spoil the dairy industry for those who are making a profit, because they help to bring a surplus of milk on the market. These individuals would find that they are not doing any good for themselves if they would only make systematic records and study them.

To bring about individual success, I believe we ought to train our boys and girls for individual efficiency. We need to train for physical efficiency. The health problem is surely one of the big problems of the school. In our county we have had a nurse for seven years. At first our county people thought her work was not necessary and that we were spending money in a useless manner. At the present time they feel that she is exceedingly valuable. I think if we had to eliminate some work, they would want to take out any other type of work rather than our health program. Of course, it is necessary in these various departments that each year we have certain specific objectives. We may especially stress as examples the matter of equipment for physical training for the high-school boys and girls, hot lunches in the school, immunization for contagious diseases, etc.

Dr. Clifton has spoken so well of the training for self-helpfulness. I think our rural people, more than any other, must depend upon themselves. They are their own managers. They are not working under the direct supervision of a director or boss who tells them what to do, or by way of routine and repetition doing the same thing every day. They are depending upon themselves, managing their own problems. They have to find out how to study, how to organize, how to use time right, and the solution of the problem of self-instruction; individual instruction will assist in accomplishing this result. Our rural people certainly need some vocational guidance. I presume we could find quite a variety of reasons why you men are working as county superintendents. In my own case, I wanted to be a lawyer but my father said, "No, Sonny, I certainly would hate to see you go to the dogs." He thought that to do something worth while, I ought to be a preacher, and the cross between the two was a school teacher.

Rural boys and girls and rural people need to know things. With a great laboratory of nature what wonderful opportunities for the teachers and the schools that can adapt themselves to those conditions. Rural boys and girls, surely above everything else, ought to know the

scientific method of solving their problems by attacking farm management scientifically, using the new conditions as they arise and making the necessary adaptations for them. Then they must be able to think. Of course, the old belief that "knowledge is power" must be changed somewhat in recognizing that that knowledge must be transferred into action.

Home economics is very essential for rural schools. In our county we have county supervision, and I think the work is well done. We start our home-economics work in the fifth grade, and our rural people like it very much. They feel we are giving them, even in the fifth grade, something practical in sewing, cooking, and house decoration. All of that is certainly worth while in their judgment. For the boys, the work of agriculture is important. In our county we do not do a great deal of vocational work, but we are introducing a club leader into the county employed in the same way as our supervisors. The club leader forms projects for our boys and girls in home work and does the same for the boys alone in the agricultural clubs.

For individual efficiency it is essential that rural pupils be taught business methods. The farmer needs to know how to keep records, how to budget, how to figure costs, how to buy economically, and how to market. In fact, all of that is a big business, and I believe that specific training can be given to make farmers more successful individuals in their particular endeavors.

In addition to training for individual efficiency there is a great need for preparing boys and girls to live as a part of the group. In other words, I think it is essential that we prepare our young rural citizens to develop a group consciousness and group feeling. The questionnaire referred to shows that co-operation is one of the rural essentials, and surely in our training we must teach them to find themselves as a part of the group that they may learn better to solve their group problems. Consolidation helps a great deal in developing community centers. It teaches how to organize, how to carry on, and how to promote group activities. Athletics helps to develop community spirit. We may be going to the extreme in our state with basket ball. Nevertheless, I think it helps to encourage an interest in the group, and from this point of view it is worth while. Leadership for group activities is very essential. Many good communities fail in their efforts because they lack leaders. The rural school must not fail to develop those who have ability to organize and co-ordinate the group activities.

We must not, however, be too practical and lose sight of the cultural element in rural education. We must prepare for efficiency

individually and for group life and group activity, but we must prepare for some of the higher values in life, the cultural value. This nation is known at the present time by many of our foreign friends as "Shylock America." You probably know of the little boy who was asked the sum of fifty and seventy-five. He said, "One dollar and twenty-five cents." He was evaluating everything in terms of money. Our rural people need to have encouragement along cultural lines in order that they may know value in terms of life and not in terms of money and property. Music, both vocal and instrumental, is just as valuable for our rural boys and girls as for others. We introduced instrumental music in our county about seven years ago. At first our patrons were skeptical about its value, but at the present time they feel it is one of the most valuable and important kinds of training that is given. There are so many boys and girls who would never get musical opportunity in any other way.

Preparation for citizenship and preparation for service in our own county is promoted through our county organization of the Junior Red Cross. The little service button encourages boys and girls to give service to others who may not be so fortunate. We have a County Council. We elect our delegates in the various schools. Those boys and girls are really thinking in terms of others instead of only in terms of themselves.

The Village Principal and County Superintendent

JULIAN E. BUTTERWORTH[1]

EDUCATIONAL development in the rural areas is influenced by many factors, such as the development of larger local districts, equitably distributed state funds, and higher standards for teachers. One of the most important factors is, in my judgment, intelligent and sympathetic yet aggressive leadership on the part of those professional officers holding positions of trust in the schools. In most states these officers are the county superintendent, or comparable officer, in charge of a large aggregation of territory, and the principal of the particular school or school district within that territory. The principal has responsibility for meeting, as best he can with available facilities, the educational needs of his community. The county superintendent has or should have general responsibility for co-ordinating the activities of the different communities under his jurisdiction and for planning how to meet new needs that are constantly arising.

[1] New York College of Agriculture, Cornell University.

In a way this problem is the same as that which the city-school organization has had to face. There the problem is, in theory at least, on the road to solution, but there are some special conditions in the rural areas that complicate the problems and call for special consideration. First, it has happened in the rural areas all too frequently that the principal has been a better-trained officer than his official superior, the county superintendent. Various circumstances have been responsible for this condition, but chief among them have been two. The county superintendent has often been elected at large so that political ideals and abilities have been emphasized, while the local principal has been chosen by a small group responsible for school development. Choice of the former officer has commonly been limited to the county, while in the case of the latter there has been freedom to seek him wherever necessary. The former has often had a definitely stated salary, which soon became inadequate in the face of rising standards and rising costs, while the latter has not been so hampered. Fortunately, this situation is now changing; yet about one-half of our states still select the county superintendent through popular election, while in one state where he is appointed and where a relatively high salary is paid, the law specifies that he must before appointment have lived in the state for at least three years.

As a second condition, in only a few states has the county been the local unit. In the city there is a single school district with the board of education responsible for all public education so that the responsibility and authority of the city superintendent has been clear and unequivocal. Outside a very few states the county board has had limited responsibility, most authority being placed in the hands of the boards of the local village, consolidated, or township districts composing the county. Often there has been no county board of education. As a result the legal authority of the county superintendent has been insufficient or indefinite. He has not been able, even where he had the training and ability, to effect the co-ordination among the local districts that modern educational needs demand.

OUR EVOLVING COUNTY SUPERINTENDENCY

While the county superintendency has not made the progress in many states that is necessary if this officer is to become a genuine educational leader, there are some states in which real development has taken place. Ohio is one of these states. I have no data sufficiently comprehensive to warrant a comparison between the county superintendent and the principal of the unexempted village in this state, but there are some facts that are indicative. Incomplete data

recently tabulated show that the county superintendent of this state is receiving a median salary of $3,406, has had a median total educational experience of 24.8 years, a median tenure of 5.8 years, and a median training above high school of 5.3 years.[2] While we all recognize that such data are indicative rather than conclusive in measuring professional ability, they are entitled to considerable weight. In order that we may see how Ohio compares with other states on these matters, I have selected nine other states in which the available evidence indicates that conditions are particularly favorable. Among the ten states, Ohio ranks second in median years of training above high school, fourth in median salary, sixth in median total experience, and eighth in median tenure.

There are many aspects of this problem, but I should like to direct your attention to that one relating to the division of responsibility between the county board and county superintendent on the one hand, and the local board and the local principal on the other. However, before we can discuss this intelligently, we must recognize that the division of responsibility between these two groups will depend upon the nature of the school organization.

TYPES OF COUNTY CONTROL

Speaking broadly there are four types of county control in the United States. First, in three states the county is the local school district, except in the very large cities, so that the county board has practically entire responsibility for education in the county. The county superintendent is the professional head just as is the superintendent in the city. As a second type, in some seven or eight states and in a few counties of three or four other states, the county board has complete jurisdiction except in those districts that are exempted, usually because of size. For example, in Alabama all places of two thousand and over must be independent of the county board of education while those between one thousand and two thousand may be independent. Third, in a very few states or a few counties of certain states there are both county and local boards and the responsibility is fairly equally divided between the two. As the fourth type, in the great majority of states control is divided between the county and the constituent districts, with a general tendency for the locality to have chief control. Ohio belongs to this group.

Where the county superintendent is the professional head of the schools, as in the first two types of organization, the legal relationship

[2] From a study being made in co-operation with the United States Bureau of Education on the status of the county superintendency.

between superintendent and principal is clear. The former is the official superior of the latter. However, our present-day ideals are leading us to see the importance of giving the principal considerable freedom. He should be allowed, subject to the general policies of the county board and the county superintendent, to direct the activities within his own school and community. This not only tends to make the principalship attractive to well-trained men and women of initiative but, by relieving the county superintendent of details, frees him for constructive activities on larger problems. Where the legal control is divided between the county and its constituent districts, as in Ohio, our problem seems most acute.

THE BASIC PRINCIPLE INVOLVED

The goal to be reached is clear: we want to place a particular duty where it may be most effectively assumed. In the long run we cannot give the county superintendent responsibility merely because he likes it nor place it upon the principal merely because the superintendent does not like it. It is efficiency in performance with which we are concerned, but to determine with mathematical exactness where this may be best secured now seems to be out of the question. However, there are certain factors that clearly affect the distribution of responsibility. In the remaining time I wish to show in what way these factors are involved and to suggest some specific data that may be collected in connection with them. In seeking to measure the probable effectiveness of different allocations of authority, the factors which follow now appear to be of prime importance.

Does the local district have a head professional officer?—In an eastern state having the township as the prevailing type of local unit, data recently collected show that almost two-thirds of these districts have no head professional officer. When this is the situation the county superintendent ought to have authority in those matters that are of fundamental importance, such as the nomination of teachers, suggesting modifications in the curriculum, and choosing books for the library. In these days of complex educational questions we cannot expect boards without professional leadership to make intelligent judgment. Most of us would doubtless agree that there ought to be a principal in charge of each district and that if necessary the district should be enlarged until it is possible to employ such an officer. It should be clear, however, that if there are such districts as these described, the county superintendent should have large responsibilities.

Does the county superintendent have superior professional training and ability?—If he does not, then we can hardly expect him to

exert effective leadership over the principal of the local district. The local principal will not usually be willing to refer questions for advice or decision to one who is his inferior professionally. When, therefore, a study of the relative status of these two officers as to training, experience, and such evidences of ability as we can secure shows that the county superintendent is inferior to the principal, the superintendent's functions should be largely nominal. Effort should then be made to improve the status of the office.

Is there need for greater specialization in an educational function than can be secured in a local district?—The problem of attendance may be taken as an illustration. In New York State each township and village has its truant officer, who is paid a nominal fee. Data recently collected showed that the median officer has completed only the eighth grade.[3] Where such conditions exist, we cannot expect attendance enforcement to be more than a legal matter—the use of legal threats to keep children in school. While this procedure is not to be neglected, the real problem of attendance is to discover why children are not in school and to remedy those conditions in school, in the home, or in the child himself that keep him out. To do this calls for professional ability and training of no mean sort. Obviously, the average school district cannot afford to secure the services of such a person and probably does not have the school population to warrant the expenditure. It should be possible to collect data that will show for the state as a whole or for representative counties the extent of non-attendance, the number and the nature of the cases to be investigated, and to infer therefrom the qualifications needed in this officer and the area that he can serve effectively. While Ohio has taken the step of having a county attendance officer, data recently collected regarding training, experience, and salary of these officials cause one to question whether the situation has yet been met effectively.[4]

Is there need for disinterested judgment on matters affecting several districts?—We are becoming conscious of a problem in secondary education that has too long been neglected. In most states each community has been permitted to develop a high school as it pleased with little or no guidance so long as it offered at least the traditional subjects, but various conditions are making us realize that a real secondary school should do more than that. It should provide curricula of various kinds to meet the needs of all social and economic

[3] Hanson, W. L. *The Costs of Compulsory Attendance Service in the State of New York.* New York: Teachers College, Columbia University, 1924, p. 50. (Teachers College, Columbia University, Contributions to Education, No. 158)

[4] Sloan, P. W. *A Study of the Present Status of the County Attendance Officers in Ohio.* Unpublished Master's thesis in Ohio State University Library, 1927.

groups in the community. This cannot be done where there are only a few pupils. Recently I estimated that in New York State about 55 percent of all high schools have an enrollment of less than one hundred. In contrast, only 11 percent of the high schools of New Jersey have such a small enrollment. The latter state has kept down the small high school partly through state regulation, partly through the leadership of the county superintendent, partly through liberal state aid of three-fourths of the cost of transportation. Ashbaugh's recent study[5] of this problem in Ohio, showing 73.7 percent of four-year rural high schools as having enrollments of less than one hundred students, gives this state data needed to realize the situation. Perhaps the solution may come in part through the state, yet the county may well have an important place. Since each district, desiring as it generally does for commercial or other purposes to maintain something to which the name "high school" may be attached, cannot be expected to be disinterested, we must turn elsewhere. The county superintendent may and should be required to make detailed studies in his county that will show the number and location of high-school pupils and the number and location of schools that may be designated to offer secondary-school facilities. The county board on his recommendation, strengthened perhaps by the approval of the state, may redistrict the county in such a way as to give the higher quality of service which modern conditions demand. I am not sufficiently acquainted with Ohio to suggest the detailed procedure whereby this may best be done.

Must there be co-operation of several districts to meet certain educational needs?—As the result of educational activities in some of our larger cities in recent years, we are beginning to realize the need for a comprehensive system of vocational education on the secondary level. The rural areas have been backward in this matter. Where vocational facilities have been provided they have been confined largely to agriculture and home-making with limited offerings in commercial subjects. It should be evident, however, that young people from the rural areas may wish to go into carpentry, masonry, plumbing, automobile repairing, salesmanship, stenography, printing, and the like. In some of these, as home-making, the demands may be such as to justify a department in each high school. In agriculture perhaps three or four departments in a county will be sufficient. In automobile repairing perhaps one to a county may meet the need. In printing perhaps one department may serve several counties.

[5] Ashbaugh, E. J. "High School in Every District Means too Many Small High Schools," *School Life*, 14:133-35.

The wise determination of such matters can come only after a careful study has been made of typical counties regarding the need for training of different types, the facilities required to provide the desired training, and the financial outlay involved. We are not likely to move ahead in providing training for all types unless the county, through the county superintendent, takes the initiative.

Similarly we are facing the problem of providing for the exceptional child. Almost nothing has been done in the rural areas to provide the differentiated offerings needed to give each exceptional child his opportunity. There must be co-operation on a higher level.

I have here attempted to point out some of the factors that are involved in determining what the local district and the county should do in a state having both levels of control. This inevitably involves the relationship between the local principal and the county superintendent and the professional responsibilities of each. As I see it we should make detailed studies on each of these and similar problems in order that we may know where, in a particular state, responsibility should be placed in order to insure efficient control. As such studies are made under widely varying conditions, we may expect detailed principles in the establishment of relationships to emerge.

Occupational Groups in City and Rural Schools

J. E. Collins[1]

The data for this study were derived from surveys of three school systems in Ohio—a representative city of forty-five thousand population and two county systems, Preble and Darke, as representative of the better county organizations. Under direction of the writer the same tests were used and the same techniques followed in the three situations that the results might be comparable.

All children enrolled in the city system, 7,413, are included. In the rural systems only children of teachers registered for the year's survey (a college credit course) are included, 1,339 in Preble County in 1927 and 1,829 in Darke County in 1928. According to Superintendents Coblentz and Wilt these groups were representative of the schools of the respective county in grade distribution, character of school population, and teaching personnel. The data, we believe, are therefore highly representative of school population—urban and rural.

General intelligence quotients were derived for each child. Stanford-Binet scores were available also for 218 cases in special schools

[1] Department of Education, Miami University.

in the city organization and for all cases whose intelligence quotients tested 75 or lower by group tests in rural systems. Summary limits forbid statement here except that the number below an *IQ* of 70 was approximately the same for both group and individual tests—over two percent in all three situations. The same achievement tests with well-established age norms were used in the three systems for deriving reading, arithmetic, and spelling ages; educational age; and ac-

TABLE I

SUMMARY OF THE DISTRIBUTION OF INTELLIGENCE QUOTIENTS

	City	Preble County	Darke County
(1)	(2)	(3)	(4)
First quartile	92.4	88.3	89.2
Mean	102.8	98.0	98.9
Third quartile	115.5	107.1	108.7

TABLE II

THE SUMMARY OF ACHIEVEMENT AND INTELLIGENCE OF PUPILS OF GRADES III-VIII

Intelligence Quotient	Number of Children	Mean Accomplishment Ratio	Intelligence Quotient	Number of Children	Mean Accomplishment Ratio
(1)	(2)	(3)	(1)	(2)	(3)
145–149	3	79	95–99	100	101
140–144	4	90	90–94	89	103
135–139	7	89	85–89	72	104
130–134	4	92	80–84	65	104
125–129	19	89	75–79	27	107
120–124	25	92	70–74	23	104
115–119	35	95	65–69	11	110
110–114	65	95	60–64	6	105
105–109	77	99	55–59	6	114
100–104	99	100	50–54	4	117
Number of Children				741	
Mean Accomplishment Ratio					100.4

complishment ratio for each child. Future diagnostic and remedial procedures followed. The accomplishment ratio technique ($AR = EA \div MA$) was used as the criterion for measuring achievement. Thus effort was made to measure each child according to his capacity.

Other data regarding school record and personal and family facts were gathered which include acceleration, retardation, age-height-weight ratio, occupation of father, and size of family. Table I shows

the intelligence distribution for the three groups, each approximating the normal curve but with all four central tendencies above the norm for city children but below the norm for both rural groups. Attention is called to the fact that the mean intelligence quotients of both our rural groups are above the average reported for rural children in New York State by Haggerty and Nash, their median being 95.8 for 6,688 children in Grades III to VIII.[2]

The achievement of the 741 pupils enrolled in Grades III to VIII when measured by intelligence quotients and accomplishment ratios is summarized in Table II. All surveys show a negative correlation between intelligence and accomplishment ratio at all grade levels. A similar lack of agreement appears in the detailed table from

TABLE III

PARENTAL OCCUPATION, INTELLIGENCE, AND SIZE OF FAMILY FOR THE RURAL-SCHOOL CHILDREN

Occupational Group	Number of Children	Mean Intelligence Quotient	Size of Family
(1)	(2)	(3)	(4)
Professorial	75	109.4	4.2
Clerical	27	108.6	3.8
Managerial	42	108.4	3.3
Trade	161	102.7	3.6
Skilled labor	301	100.1	4.4
Agricultural—Owner	1,009	98.6	5.0
Agricultural—Renter	981	97.3	5.2
Unskilled labor	205	93.4	5.2
Unknown	110	95.7	4.3
	2,911	98.6	4.9

which the data in Table II were taken. This is due obviously, in part at least, to the traditional practice of setting the same hurdle for all pupils regardless of ability. All intelligence groups above par in this group had accomplishment ratios below the norm according to this criterion, while the opposite was true for all groups below par in ability. There were individual exceptions, of course, at all levels.

I regret that the limit set for this report forbids statement concerning the more detailed part of the surveys, the relation of intelligence of children to size of family and occupational status of the father, except as summarized in Table III for the combined rural groups.

[2] Haggerty, M. E., and Nash, Harry B. "Mental Capacity of Children and Parental Occupation," *Journal of Educational Psychology*, 15:561, December, 1924.

Educational and Intelligence Tests

Standard Tests as an Aid in Supervision

W. J. Osburn[1]

Good standardized tests are so made that a sample is taken of each important element of subject-matter. When tests are thus carefully constructed, they are of very great value as aids in supervision. Under such conditions it is obvious that information can be obtained relating to the success or failure of the pupils upon each significant element of subject-matter. The very fact that the attention of superintendents and supervisors is definitely focused upon the main elements in the constitution of subject-matter is a powerful aid in supervision even if nothing further is done.

Something further can be done, however. An error study can be conducted showing just which items are most frequently missed and which ones are never missed. Then a careful study of the test papers will often disclose the cause of the mistake which pupils make. This may in turn be supplemented by a detailed individual study of the oral responses of the pupils who make errors. That is, after the test is over and it is known that certain questions have been missed by a large number of pupils, the exact cause of the trouble can be ascertained by holding personal interviews with each pupil who is in arrears.

An error study based upon test papers was made by the writer. The study was based on the Woody-Theisen Parallel Arithmetic Tests. It involved more than three thousand children scattered all over the state of Wisconsin. The children made 21,548 errors in all of the four processes in the fundamentals of arithmetic.[2] Later Buswell and John made a similar study in which they followed up the error study with personal interviews involving about six hundred children from Grades II to VI in schools in and around Chicago.[3] The six types of errors which were observed most frequently in these two studies are listed in Table I. Under each one of the four

[1] Ohio State University and State Department of Education.

[2] Buckingham, B. R., and Osburn, W. J. *Teachers' Manual for Grades V and VI, Searchlight Arithmetics.* Boston: Ginn and Company, 1928. 193 pp.

[3] Buswell, G. T., and John, Lenore. *Diagnostic Studies in Arithmetic.* Chicago: University of Chicago Press, 1926. 212 pp. (Supplementary Educational Monographs, No. 30)

fundamental arithmetical processes the types of errors found most often in Illinois schools by Buswell and John are grouped under the name of the state. Those most often detected in the Wisconsin test papers are similarly arranged. The reader will notice the interesting similarity exhibited by the total percentages for the corresponding groups of errors for each state.[4]

TABLE I

TYPES OF ERRORS IN FUNDAMENTAL PROCESSES FOUND IN TWO STUDIES

ADDITION

TYPE OF ERROR	PERCENT OF FREQUENCY
In Illinois—	
1. Error in combinations	15
2. Counting	10
3. Added carried number last	7
4. Forgot to add carried number	6
5. Retraced work when partly done	6
6. Added carried number irregularly	5
Total	49
In Wisconsin—	
1. Failure to reduce the sum in fractions to proper terms	18
2. Adding the numerators for a new numerator and the denominators for a new denominator	11
3. Failure to carry correctly	8
4. Failure to point off correctly	3
5. Use of multiplication for addition	3
6. Inversion of the answer	2
Total	45

SUBTRACTION

In Illinois—	
1. Errors in combinations	18
2. Did not allow for having borrowed	12
3. Errors due to zero in the minuend	10
4. Reversed subtraction	7
5. Failed to borrow; gave zero as answer	7
6. Added instead of subtracting	4
Total	58

[4] The figures for the Illinois schools throughout Table I are taken from Buswell and John, *op cit.*, pp. 136-39. Percentages were computed by the writer. The figures for the schools of Wisconsin throughout the table are taken from Buckingham and Osburn, *op. cit.*, pp. 37-42.

SUBTRACTION

Type of Error	Frequency of Percent
In Wisconsin—	
1. Failure to pay back	16
2. In decimals, writing the apparently smaller under the apparently larger	10
3. Reversed subtraction	10
4. Subtracting denominate numbers as abstract numbers	9
5. Failed to reduce fractional answer	9
6. Failed to borrow; gave zero as answer	9
Total	63

MULTIPLICATION

In Illinois—	
1. Errors in combinations	11
2. Errors in adding the carried number	9
3. Wrote rows of 0's for 0 in multiplier	6
4. Errors in addition	6
5. Carried the wrong number	6
6. Forgot to carry	5
Total	43
In Wisconsin—	
1. Failure to point off answer	11
2. Failure to multiply by fraction in a mixed number multiplier	10
3. $0 \times A = A$	6
4. Pointed off wrongly	5
5. Errors in combinations	4
Total	36

DIVISION

In Illinois—	
1. Errors in combinations	12
2. Errors in subtraction	7
3. Errors in multiplication	7
4. Used remainder larger than divisor	6
5. Found quotient by trial multiplication	5
6. Failed to take account of the remainder	4
Total	41
In Wisconsin—	
1. Multiplied instead of dividing	11
2. Omitted 0 in the quotient	11
3. Failed to reduce answer	7
4. Failed to point off the quotient	7
5. Subtracted instead of dividing	7
6. Failed to point off correctly	6
Total	49

Numerous other error studies in the fundamentals of arithmetic have been reported but cannot be discussed here. Owing to space limitations, we shall attempt to present the results only of the studies that have been mentioned and to call attention to their implication in terms of supervision. Two things stand out very clearly. First of all, children do not make chance errors. All of the errors can be classified as definitely and clearly as physical diseases can be classified. In fact, the two classifications are markedly similar. In each case we find that certain causes are operating over wide areas which tend to make people err on the one hand and become ill on the other. Just as most people die from a small number of diseases, so most pupils fail because of a few widely operating causes. Furthermore, there are many causes which are responsible for a multitude of errors, but each cause affects only a few children.

The importance of the implications are obvious. Physicians are wisely spending most of their time searching for a successful treatment for organic heart disease, tuberculosis, cancer, and influenza, because these are the diseases which sooner or later get most of us. Supervisors must bend their efforts toward the eradication of the few causes which are responsible for most of our failures in school.

The results of both error studies and vitality statistics agree in another important respect. The percentage of deaths for any given disease are rather constant everywhere. In like manner, the causes of errors are constant and widespread. The percents of error of each type are astonishingly constant whether the study is made in Wisconsin, Illinois, Michigan, Oregon, or somewhere else.

The message which these tables contain for the supervisor is unmistakable. By clearing away only six difficulties, from 36 percent to 63 percent of all the trouble can be removed. This means that when a carefully constructed test is used, supervision can be reduced to a genuine business basis. By this means we know just what we should do, and furthermore we know just how great the benefit will be when we shall have done it.

Listening Ability

Paul T. Rankin [1]

Ordinarily in a meeting devoted to tests and measurements, the emphasis is placed on the use of the instruments of measurement, or on the improvement of those instruments. Occasionally, however,

[1] Supervising Director of Research and Adjustment, Detroit public schools.

we need to reconsider the tests to make sure that we are testing—and teaching—the abilities which most certainly need to be developed. This paper is concerned with listening ability, one which has been somewhat neglected by the school.

By listening ability I mean the ability to understand spoken language. I do not mean the readiness to pay attention, as teachers often do when they say, "He won't listen," or "He won't pay attention." Rather, I mean the trait that has the same relation to speech that reading has to writing, the ability to listen well is to understand what one hears.

The diagram given in Figure 1 may help to show the place of listening ability among means of communication. There are two forms of expression, speaking and writing, and two forms of understanding,

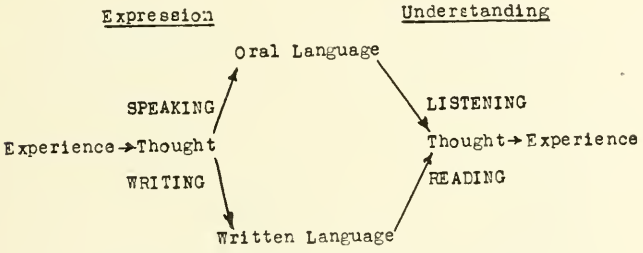

Figure 1. Communication through verbal symbols

listening and reading. Thus, a person has an experience which leads to thoughts which he desires to convey to another. He may do this through oral expression (speaking), or through written expression (writing). In the former case he speaks, and the other person listens; in the latter case he writes out his ideas, and the other reads them. Practically everyone needs to have control over all four of these abilities.

My purpose is to present some evidence of the importance of listening ability, some proposals for its measurement, and some information about its relationship to other traits.

IMPORTANCE

I shall assume at the outset that the importance of any ability, from the point of view of the school, is to be judged on four bases: (1) the frequency of use in life, (2) the intensity of need for the ability, (3) the value of the ability in developing other abilities, and (4) the absence of adequate control over the ability without specific

training. An analysis of the language arts has been made from two of the points of view, that of frequency and that of failure.

A number of different people kept record of their waking time with reference to the type of communicative activity involved. As is shown on the sample portion of the record blank (Table I), each fifteen-minute period in the day was classified as to the type of communication which was going on. Thus, from 3:00 to 3:15 and from 3:15 to 3:30, this particular individual was reading, shown by R; from 3:30 to 3:45 and from 3:45 to 4:00, he was carrying on a conversation, indicated by C. Records like this were obtained for sixty days as recorded by twenty-one different people. The average percentage of waking time spent in each of the four language arts

TABLE I

ILLUSTRATIVE RECORD OF TIME IN COMMUNICATION

Name..... Occupation—Housewife

Date—March 31, 1929 Day of Week—Sunday

Time	Com.	Time	Com.
(1)	(2)	(3)	(4)
6:00–6:15.....	.....	3:00–3:15.....	R
6:15–6:30.....	.....	3:15–3:30.....	R
6:30–6:45.....	.....	3:30–3:45.....	Cl
6:45–7:00.....	.....	3:45–4:00.....	Cl
10:30–10:45.....	Cl	7:30–7:45.....	T
10:45–11:00.....	Lf	7:45–8:00.....	T
11:00–11:15.....	Lf	8:00–8:15.....	Lv
11:15–11:30.....	Lf	8:15–8:30.....	N

KEY: C, conversation (Ch, high order; Cl, low order); T, talking; W, writing; R, reading; L, listening (Lc, to conference; Lo, to oral reading; Lm, to memorizations; Lf, to formal talks; Ld, to directions; Lv, to vocal music); M, miscellaneous; N, no communication.

was computed. For the purpose of this analysis, the time in conversation was divided equally between talking and listening, in the belief that, in general, one listens about half the time and talks about half the time during a conversation.

The percentages were about 42 percent in listening, 32 percent in talking, 15 percent in reading, and 11 percent in writing. The most striking thing is the large importance of oral language—74 percent in all. Talking occurs three times as much as writing, and listening almost three times as much as reading. It is evident also that the receiving forms, listening and reading, are used much more frequently than the expressional forms, talking and writing.

The data for the foregoing statement were gathered in 1926. I have recently collected additional data on the same forms. A very

similar distribution of frequency appears when the 1929 figures are compared with those of 1926 (see Table II). This fact suggests that the time analysis is fairly reliable.

If the time records of the sixty days are sorted by occupation into the thirty-one days reported by teachers, the eighteen days reported by a housewife, and the eleven days reported by people in miscellaneous occupations, the distributions of time (see Table III) are seen

TABLE II

AVERAGE PERCENTAGES OF TIME SPENT IN COMMUNICATION THROUGH VERBAL SYMBOLS FOR 1926 AND FOR 1929 DATA

Form of Communication	1926 Data	1929 Data	Weighted Average
(1)	(2)	(3)	(4)
Listening	42	47	45
Talking	32	29	30
Reading	15	17	16
Writing	11	7	9
Total	100	100	100
Number of days	69	49	109
Number of persons	21	47	.....

TABLE III

AVERAGE PERCENTAGES OF TIME SPENT IN COMMUNICATION FOR PEOPLE IN THREE OCCUPATIONAL GROUPS

FORM OF COMMUNICATION	OCCUPATION		
	Teacher	Housewife	Miscellaneous
(1)	(2)	(3)	(4)
Listening	47	35	40
Talking	31	35	30
Reading	15	13	18
Writing	7	17	12
Total	100	100	100
Number of days	31	18	11

to be quite similar. In each case talking far surpasses writing, and listening surpasses reading. Listening is second to none of the four forms in frequency of use.

The consistency from day to day was studied also (see Table IV). There were records available for eleven teachers on a school day and for the same eleven on a holiday, Saturday or Sunday. The percentages are substantially the same on the two days. The only significant changes are increases in reading and writing at the expense

of talking. The evidence which has been presented brings out the fact that oral language occupies a very much larger place in adult life than does written language. The question which arises immediately is, "How does the life distribution of emphasis compare with the school distribution?" Of course, frequency of use should not be

TABLE IV

AVERAGE PERCENTAGE OF TIME SPENT IN COMMUNICATION ON HOLIDAYS AND OF SCHOOL DAYS FOR ELEVEN TEACHERS

Form of Communication	Holiday	School-day
Listening	47	48
Talking	29	36
Reading	17	11
Writing	7	5
Total	100	100
Number of days	11	11

TABLE V

TIME ALLOTMENTS, DETROIT, 1926: MINUTES PER WEEK IN LANGUAGE ARTS

	GRADES					
	I and II	III and IV	V and VI	VII and VIII	Averages	Percentages
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Expression—						
Oral (composition)	60	40	80	105	71	10
Written (composition, spelling, handwriting)	100	220	280	305	226	30
Understanding—						
Oral (literary appreciation)	90	60	45	45	60	8
Written (reading, literary appreciation)	680	415	255	205	389	52
Total	930	735	660	660	746	100

the sole determiner of the emphasis which an ability should receive in the school curriculum, and yet it is exceedingly important.

The relative attention given to these four aspects of language in the Detroit public schools is shown in Table V. Under oral expression is included what is called oral composition, and under written expression is included the time devoted to written composition, spelling, and handwriting. Spelling and handwriting are listed here,

because their primary purpose is to facilitate the expression of ideas in written form. Understanding of oral language includes the time spent in the appreciation of literature presented orally. Understanding of written language includes the time spent in reading and in the appreciation of literature read by the pupils. The figures are given separately for Grades I and II, III and IV, V and VI, VII and VIII, based upon the official time allowances. The average time per week is given in minutes and in percentages. It is seen that 10 percent of the school time on language activities is devoted to oral expression, 30 percent to written expression, 8 percent to understanding of oral language, and 52 percent to understanding of written language. Detroit is believed to be reasonably typical in these regards.

For purpose of comparison the data which show the frequency of use of the different language arts have been assembled with the

TABLE VI

LIFE-USE AND SCHOOL EMPHASIS ON THE FOUR LANGUAGE ARTS EXPRESSED IN PERCENTAGES

Form of Communication	Life Use	School Emphasis
Expression—		
Written (writing)	9	30
Oral (talking)	30	10
Understanding—		
Oral (listening)	45	8
Written (reading)	16	52

data which show their emphasis in the Detroit schools (see Table VI). Oral expression, or talking, occupies 30 percent of the time spent in communication in adult life but received only 10 percent of the school time for the development of language. Written expression, on the contrary, occupies only 9 percent of time in communication in life but receives 30 percent of emphasis in school, that is, the ability which is used more frequently in life receives less emphasis in school, while the ability which is used less in life receives more emphasis. The same general situation is found in the understanding aspect of language. It is even more striking here. Listening, or the ability to understand spoken language, is used in life three times as much as reading, but it receives less than one-sixth as much emphasis in the school.

Such data clearly support the widespread tendency toward a greater emphasis upon spoken language. To me the evidence suggests that we should go still further; that we should devote a still

larger proportion of language time to the development of skill in talking, and particularly in listening.

I have collected some data, also, regarding the degree of control possessed by pupils over the ability to understand spoken language. One illustration will be presented (see Table VII). A reading test, the Detroit Reading Test III, was given orally to 126 children in the Grade V so that their listening ability could be measured. The

TABLE VII

SCORES MADE BY FIFTH-GRADE CHILDREN ON THE LISTENING TEST[a]

SCORE	CHILDREN MAKING EACH SCORE	
	Number	Percentage
20	1	0.8
19	6	4.8
18	4	3.2
17	12	9.5
16	23	18.2
15	13	10.3
14	22	17.7
13	11	8.7
12	6	4.8
11	12	9.5
10	5	4.0
9	7	5.6
8	3	2.4
7	1	0.8
6	.....	.....
5	.....	.....
4	.....	.....
3	.....	.....
2	.....	.....
1	.....	.....
0	.....	.....
Total	126	100.0
Median	14.8	.....
Quartile deviation	2.0	.....

[a] Parker-Detroit Reading Test III, Form A, given orally.

distribution of scores, ranging from one score to 20 correct to one score of 7 correct, looks like the distributions obtained on other abilities. That is, some children, a small number, seem to have the ability developed to a high degree and some have it to a very low degree. Only one child out of 126 made a perfect score on the test. The median was 14.8. This means to me that there is considerable difficulty in the understanding of spoken language. The median child understood less than three-quarters of the material presented orally well enough to make proper answers to the questions asked.

The significance of this fact is appreciated when we look at the type of material presented. Here is the paragraph of median difficulty in the test which was used.

> F. New England has a large forest area. Lumbering has been carried on here longer than anywhere else in the United States. Maine is often called the Pine Tree State. Trees are cut here and floated down the rivers to the saw mills, for which the falls furnish power.
>
> 11. What kind of logs would you expect to see in the rivers?
> oak—birch—maple—pine
> 12. From where do the mills get power?
> electricity—falls—hand—machinery

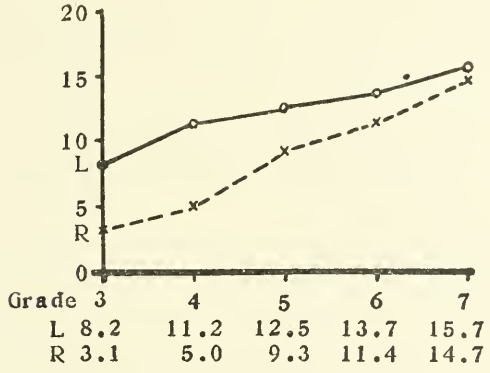

Figure 2. Comparative development curves in reading and listening

It may be shown also that the increase in listening ability is small in going from lower to higher grades. Another form of the Detroit Reading Tests III was given as a listening test throughout a school of average mentality. The solid line in Figure 2 shows the grade medians in listening. The same test was then given as a reading test in several other schools of substantially the same mental level, and the medians plotted on the dotted line. In Grade III, reading ability was very low in comparison with listening ability on the same material. In Grade VII, the two were very close together. Thus, the rate of development in reading was very much greater than the rate of development in listening, as is shown by the steeper growth curve. This fact is quite to be expected, because, as we have seen, in every elementary and intermediate classroom much more training is given to developing reading ability in the pupils than is given to developing listening ability.

The conclusion from such data is that training in listening should be emphasized in the curriculum more than at present because (1) listening is the most used form of communication, and (2) without special training, listening ability does not develop to a degree adequate for life needs.

MEASUREMENT

Good teaching is always based upon knowledge of the pupils to be taught. The ungrammatical folk who speak of "learning" children are really right. The problem of teaching boys and girls to understand what they hear is no exception. Adequate measurement of a pupil's listening ability is very helpful in the process of developing ability in listening. Good listening tests, like good tests in any field, consist of situations that are representative of life situations where the ability is to be used. The reason for this is that the test is bound to influence the teaching, and it is always well to stress genuine life activities. In addition, good tests are valid; they measure the desired ability accurately. Further, they are convenient to administer. All three of these traits are to be sought in tests of listening.

Of course, the simplest way to prepare a listening test is to present a reading test orally. I have used this device a good many times with the help of the various standardized reading tests. One needs to take care that the rate of presentation is appropriate and constant, that the correct answer is not given away by the facial or vocal expression, and particularly that the conditions of voice, pitch, and pauses, do not vary from one test to another. Granted that these precautions are observed, such reading-listening tests serve fairly well. My principal objection to such makeshift tests is that the material was designed primarily to be read and not to be listened to. The tests are not representative of real life listening situations.

Reference to an analysis of the ways in which listening was used in the 60 days reported before will be of interest in this connection. The total time devoted to listening was divided as follows:

	PERCENT
Trivial conversation	50
Significant conversation	19
Hearing formal talks	9
Hearing vocal music	8
Hearing memorizations (plays, etc.)	7
Hearing conferences	4
Hearing oral reading	2
Hearing directions	1

Evidently the important listening situations are somewhat as follows: (1) conversations and interviews; (2) discussions in small and large groups, usually for the purpose of arriving at a decision; (3) addresses, sermons, and lectures; (4) plays, "talkies," oral readings; and (5) oral readings. These are the ones for which tests are needed. I have attempted to devise a test to measure listening ability as it is needed in a group conference. The situation chosen is evident from the directions, a portion of which follows.

After some preliminary statements, designed to make the pupil conscious of the importance of ability to understand what he hears, the examiner says:

A number of you have taken part in meetings, like class meetings, where a decision had to be made. Of course, the reason for meeting together is to listen to the ideas of everyone in the group for the purpose of picking out the best idea. Each person needs to understand just what everyone else contributes to the discussion. Otherwise one cannot vote intelligently.

Today the examiner is going to tell you what each boy and girl in a certain sixth grade said at his class meeting. Pretend you are a member of that class. Listen to what is said, so that you can vote wisely on the best scheme. Listen to every speech, trying to hear just what idea is being proposed by the speaker. In order to check on how well you understand each speaker, the examiner will ask a question after each speech and will suggest four possible answers, one of which is right. You are to choose the right answer from these four and write it down. Finally, you are to vote for what you think is the very best plan suggested.

The introductory remarks of the chairman are the practice test.

The chairman called the meeting to order and said: "The other day Miss Jones told us that this was to be our room and that we could decorate it any way we pleased. This is a new building, and so the room has wonderful possibilities. We are having this meeting today to decide what we shall do first. Each one of you may tell what he would prefer to have for the decoration. Emily will write them on the board so that we can easily remember all of the suggestions. When you give your suggestion, please give your reason for it."

The question, What was the reason for the meeting?

1. To complain about the bare room.
2. To ask for a more cheerful room.
3. To decide how to decorate the room.
4. To have Emily write on the board.

The points about this test to which I wish to call particular attention are: (1) the presence of a fairly real purpose on the part of pupils for the entire listening period; (2) the fact that the material

was designed to be spoken, not written, and contains contractions, such as "don't" for "do not," and other characteristics which distinguish spoken from written language; and (3) the fact that the question on each speech relates directly to the contribution of that speech to the general argument and thus tests what a good listener should understand in that situation.

DEVELOPMENT

The relationships of any trait to others, such as intelligence or reading, are always important. They are particularly so in the case of listening ability, because many people think of this ability as being difficult to separate from the thing we call intelligence. Indeed, listening tests have served frequently as measures of intelligence. If the 90 tests of the Stanford Revision of the Binet Examination are classified from this point of view, twelve are found to consist wholly of tests of the ability to understand thought units that are presented orally by the examiner and heard by the subjects,[2] four test the understanding of oral vocabulary,[3] and sixteen others require understanding adequate to repeat the materials that are heard.[4] Thirty-two of the ninety tests involve considerable listening ability and, indeed, might be called listening tests.

As a matter of fact, if scores on listening tests are correlated with scores on intelligence tests, the correlations are no higher than in the case of reading tests. Thus, the two forms of the listening test which I just described correlate with intelligence test scores, +.64 and +.51 in Grade V-A (113 cases), and +.53 and +.57 in Grade VII-A (143 cases), with an average of +.56.[5] A composite of eight different listening tests, covering a period of about two hours of testing, correlates only +.67 with scores on the intelligence test in both grades. These facts indicate that listening ability is not more closely associated with intelligence than are other school skills in reading and arithmetic.

A further study of relationships was made by giving four reading tests, the Detroit Reading Test (4), Monroe Reading Test (2), the Thorndike-McCall Reading Scale, and the Stanford Achievement Test on Sentence Meaning, to about two hundred fifty children in Grades V and VII. Then equivalent forms of these four

[2] Tests IV-5, V-6, VI-4, VIII-3, X-2, X-5, XII-5, XIV-2, XIV-4, Ave. Ad.,-2, Ave. Ad.,-4, Sup. Ad.,-4.

[3] Tests III-1, V-4, VIII-5, XII-2.

[4] Tests III-6, III-Alt., IV-6, IV-Alt., VI-6, VII-3, VII-Alt. 2, IX-4, X-Alt. 1, X-Alt. 2, XII-6, XIV-Alt., Ave. Ad.,-5, Ave. Ad.-Alt. 1, Sup. Ad.-3, Sup. Ad.-5.

[5] Detroit Alpha Intelligence Test.

tests were presented orally as listening tests to the same children. In each grade, each of the four reading tests was correlated with its corresponding listening test. The mean of these correlations between a test given as a reading test and an equivalent form given as a listening test was only +.48. This indicates that reading and listening are no more closely associated than are reading and English.

Further, the mean correlation is +.82 between the reading composite score and each individual reading test and is only +.52 between the reading composite and each individual listening test. Similarly, the mean correlation is +.60 between the listening composite score and each reading test but is +.73 between the listening composite and each individual listening test. These facts indicate that reading and listening abilities are far from perfectly correlated. The obvious implication is that specific training must be given if it is desired to develop good listeners. Training in reading alone cannot be relied upon.

In summary, it may be said that: (1) Listening ability is the most frequently used ability in communication. (2) This ability can be measured with comparative ease; incidentally it should be mentioned that the testing of listening ability is very inexpensive, because little material is required for each pupil. (3) The ability has been shown to vary widely in different people. There is as great a range in power to listen well as in other abilities which have been tested. (4) The ability can be developed. It is no more closely related to what the intelligence tests measure than reading or other school subjects.

The procedure for training the pupil's listening ability is not materially different from that needed for other abilities. The pupil's purpose must be aroused, the most common one being the recognition of listening as a means of sharing experience. Inventory needs to be made of the initial abilities and disabilities of the pupil in various phases of listening. Practice in listening—directed experience in many listening situations—with checks of various types similar to those used in reading lessons is then essential. I wish especially to propose more emphasis on training the listeners during audience reading in the reading period. Ordinarily only the one who is reading aloud secures much benefit from that period. There is a fine opportunity here for the good teacher to give valuable training to those who are listening. Finally, a good training program will include the step of appraisal, the securing of evidence as to which pupils have grown and how great has been their development. The thought which I wish to leave with you is that one task of the school is to develop most efficiently each child's ability to understand what he hears.

Administrative Problems of Testing

GEORGE R. JOHNSON[1]

THE ADMINISTRATIVE problems of testing in a city-school system are numerous. This discussion will be confined, however, to a few of the major issues: For what purposes shall tests be given? What tests shall be used? Who will give the tests? How will the results be utilized?

THE PURPOSES OF GIVING TESTS

The purposes for which tests should be given are specific. Briefly enumerated, the principal purposes for which tests are given in the city-school system are: research, surveys, supervision, and diagnosis. It is legitimate, however, to use tests to secure any measurement of ability or progress of children in the school system when any properly constituted authority desires such measurements for practical use in the improvement of education. It is not proper to give tests for the mere satisfaction of idle curiosity.

Research.—Practical research in a city-school system is necessary for guidance in administration. For example, if a curricular change is proposed, the need for change can be determined, in part, by the giving of suitable tests. Additional tests at a later date will throw light upon the value of the changes made. If a new type of educational material or procedure is to be introduced, the controlled experiment will be helpful to the superintendent in evaluating the proposal. No school administrator today can be classified as progressive unless he has made adequate provision for determining his courses of action, so far as possible, on the basis of research findings; and some of these research findings will have to be obtained in his own system.

Surveys.—A general survey of achievement in any grade, any subject, any division of the school system may be justifiable in order to inform the superintendent accurately concerning existing conditions. Such information will enable him to act more intelligently upon any matters pertaining to curriculum, time allotment, supervision, and the numerous other administrative problems which the superintendent has to solve. Educational surveys directed by the school superintendent or his staff are necessary from time to time, not only to inform the school people themselves as to the educational standing of their school system as compared to others, but to inform the public as to the results obtained. Taxpayers have a right to know, in terms which are as exact and objective as possible, just

[1] Director, Division of Tests and Measurements, St. Louis public schools.

what results they are obtaining for the money which is being invested. Carefully planned and well-directed internal surveys constitute an important factor in the administrative work of the city-school system; consequently tests for this exclusive purpose are justified.

Supervision.—Supervision based on mere guesswork and personal opinions can no longer defend its existence in a progressive school system. Tests offer the tools and the technique for ascertaining accurately the progress which the schools are making. In fact, a standardized test is a supervision-saving device. Any test score offers a definite and accurate bit of information. A weakness discovered on this basis ceases to be personal; it is merely an objective fact. With complete and adequate measuring instruments, a well-trained teacher can be her own supervisor and, where special supervisors are employed, she can better utilize the expert service.

Diagnosis.—In testing for diagnosis, the purpose is to aid the teacher in ascertaining pedagogical needs and in meeting them by proper responses. Judged by the amount of testing required in a public-school system, diagnostic testing should exceed research, survey, and supervisory testing combined. In this field of testing, however, it is not sufficient to state in a general way that the purpose is for pedagogical guidance; the particular nature of the information needed must be clearly understood before the tests are given. Is the desire to find out what native ability a child has to discriminate between musical tones? If so, a type of test will have to be selected accordingly. Is the desire to find out what facts in music a child knows? If so, another type of musical test is necessary. Is the purpose to find out how well a child can subtract or add or multiply or divide? If so, the test will have to be chosen accordingly.

All of the aptitude and prognosis tests are included in this field of diagnostic testing. The determination of a child's elective courses in high school, the vocation for which he should be advised to prepare, or the mental ability group to which he should be assigned, is a matter primarily for teachers to decide in the light of all known facts. The test scores will constitute significant elements for consideration, however; and such test scores should be obtained and used by the teacher who is the educational diagnostician.

WHAT TESTS TO USE

What tests will serve the various purposes for which they are to be given is a question in which a centralized bureau of tests can give one of its chief services to a school system. The principal or teacher, occupied fully with the details of instruction, the study of pedagogical

method, and the execution of all required duties, has little time to study the relative merits of available tests and the particular purposes which they will serve when given. Just as the pharmacist aids the physician by compounding and supplying medicines, so the testing bureau aids the teacher by constructing and supplying tests.

Unfortunately, there has not yet been developed any adequate system of determining the usefulness of a test with much accuracy or reliability, until after local experimentation has been made. One of the recent attempts to make an evaluation of tests for educational purposes is that contained in Dr. Truman Lee Kelley's book entitled *Interpretation of Educational Measurements*. Dr. Kelley admits that his effort is very inadequate, and he offers it only as a stimulus or challenge to the testing world to do something better. In his scheme of evaluation one finds such absurdities as a comparison between the Seashore tests of musical ability and the Kwalwasser-Ruch test of musical achievement. It would be just as much in order to compare the value of the quart and the yardstick as measuring instruments. The Seashore test is designed to discover the degree of native ability which a child possesses, without reference to whether he is trained or untrained in the field of music. The Kwalwasser-Ruch test, on the other hand, is an effort to measure the musical information which a child has acquired, irrespective of what his degree of native ability might be. Any effort to compare these tests, therefore, is an attempt to compare two things which simply are not comparable. They are different because they are designed for different purposes. The value of either test would depend entirely upon the specific purpose for which it is to be used.

In selecting tests, therefore, the first and most fundamental question to be decided is the question of specific purpose. In giving arithmetic tests, does one want to discover the general level of achievement in all arithmetical processes, or does one want to discover specifically each pupil's skill in adding? If the latter purpose prevails, is it desired to find out merely how accurately children add, or is the rapidity of adding to be measured? Does one wish to measure not only the accuracy of adding and the rapidity of it, or is it also desired to measure the extent to which a particular method of adding has been used? Obviously, an arithmetic test cannot be selected, therefore, without asking very specific questions regarding the purpose for which it is wanted. In order to measure weight, scales are used. In this situation everyone is familiar with the fact that the kind of scale to be used for weighing coal will differ greatly from that employed in the laboratory to weigh chemicals. It ought

to be equally clear that in measuring achievement in arithmetic the scale must be selected with reference to the exact nature of arithmetical achievement to be measured.

WHO SHALL GIVE THE TESTS?

More and more it is becoming an accepted fact that teachers are the proper persons to give the tests. Testing is, in fact, a function of teaching. Occasionally, however, one still finds educators who hold to the earlier concept of testing. Such persons would have all testing done by examiners from a specialized bureau. In another section of this Conference, I am discussing at length the subject of testing as a function of teaching, and in that discussion I am endeavoring to show that for practically all purposes for which tests are given no more reliable testers, as a class, can be found than the classroom teachers. The assembled facts of our past experience are sufficient to warrant the conclusion. Moreover, it accords with the best theory of school administration.

Having a different classroom teacher administer a group test to each class examined introduces a kind of uniformity which is entirely absent when the same examiner goes to all classes. I refer to the understanding which exists between a teacher and her pupils. The teacher who knows the limits of vocabulary in her class, the temperamental qualities in her pupils, the conditions which are necessary to bring forth the best effort, and the various other qualities in which classes will differ, can introduce a uniform type of pupil effort which will not be found in the work of a strange examiner who comes before the class.

Physicians, the world over, make tests of temperature, blood pressure, or any other condition of the patient where measurements are desired, and the utmost confidence is placed in the physician's integrity and capability. Education will arrive at the level of a genuine profession only when teachers are trusted similarly. Many school systems, today, employ a large number of school men and women to direct and supervise teachers. No corps of overhead workers is necessary in the practice of medicine or in the practice of law. Neither will it be necessary in the practice of education when teachers have free access to the measuring instruments which are being developed for guidance. Tests in the hands of teachers will make self-supervision possible in a larger degree than is now contemplated. Tests are, in fact, supervision-saving devices.

The question of interpreting and using the results of tests resolves itself into a more fundamental one, however. Will the teacher be a

professional person placed in a situation where professional judgment, insight, and discretion shall be used, or will the teacher be a mere performer of routine specified by someone higher up? For my own part, I can entertain only one answer to the question. The teachers of children are professional people charged with professional responsibilities in the education of children just as physicians are professional persons carrying responsibility in the matter of health. If this answer be accepted, then the interpretation and use of tests must be construed as a teacher's function. Tests given for the purpose of an administrative survey, tests given in a controlled experiment, directed by an instructional research bureau, or tests given for the administrative placement and grading of children in a school system may logically be interpreted and used by other educational workers than the teacher. In all cases, however, where the use of the results is to improve the educational condition of the children tested, the teacher must be allowed to act as master of the situation; and even in survey and research work, the teacher is usually the proper administrator of tests.

In brief outline, the major problems to be confronted in directing the work of educational testing in the city school system have been stated, and answers, as developed through the policies of testing in St. Louis, have been indicated somewhat arbitrarily. The philosophy of administration upon which the answers are predicated may be epitomized as follows: the classroom is the functioning point of a school system; the teacher is a professionally responsible person, master of both the science and the art of education; the bureau of tests is a service department to aid teachers by supplying tools, technique, and counsel in the field of testing.

Formal and Informal Testing

Arthur I. Gates [1]

During the last decade, many types of formal and informal tests of educational attainments have made their appearance. For convenience in discussion, the various tests may be grouped in four classes as follows: (1) standardized tests of general achievement, (2) standardized tests of specific attainments, (3) standardized diagnostic tests, and (4) informal tests of specific attainments. Since a thorough-going program will embrace tests of each of these four types, it will be advisable to characterize each of them, although the major attention will be given to the last, the informal tests.

[1] Teachers College, Columbia University.

Standardized tests of general ability were among the first to appear for use in the public schools. Such tests as Thorndike's Test of General Merit in Drawing and Writing, such instruments as the Woody-McCall Tests in Mixed Fundamentals are samples of this type of instruction. Tests which measure achievement in a general way are useful for many purposes. They yield a rough measure of advancement in particular subjects. They are useful for comparing the achievements of one school or one class with another, for comparing the general outcomes attained by different educational methods, and for the rougher types of classification and promotion. They do not yield an accurate picture of irregularities in achievement by individual pupils. They are not diagnostic.

STANDARDIZED TESTS OF SPECIFIC ATTAINMENTS

Achievements in every subject is the result of attainments of many particular skills, facts, abilities, and attitudes. General attainment is no more than a rough average of many particular achievements. What the classroom teacher needs to know is in what particular skills or abilities a class or a child is relatively strong in the light of his capacity, in what ones he is mediocre, and in what ones he is superior. The teacher, in other words, wants to see the results of tests which will offer some specific type of suggestions concerning directions and means of improving instruction. Instruction to be effective must be specific. It must be aimed at particular abilities.

Recent research has shown, in the case of many school activities and subjects, the character of the more important types of attainments. Thus, in reading, research has shown that there are several types of reading reactions that are more or less specific and that are to be strengthened by specific experiences. It is plainly desirable, therefore, that tests be devised that will measure these more important specific reactions.

These tests should measure, as nearly as possible, the type of reading skill that is desired. In order to do so, a test must provide a typical and useful reading situation to which the pupils are asked to react. The content should be interesting and useful. It should represent, as nearly as possible, the type of material and activity that children should pursue in the classroom work. A series of tests, the results of several years of careful experimentation for measurement in reading, illustrate in some degree a battery of tests in specific attainments. The following series of tests comprise a battery which will measure a number of the more outstanding attainments to be sought in this subject.

1. A test designed to measure ability to get the general significance of the passage. The passages are representative of reading materials now commonly called recreational reading. The child's purpose is merely to get the most outstanding and significant facts revealed in the passage.
2. A test composed largely of recreational material in which the pupil is required not only to get the main idea of the paragraph but also to use the idea to interpret a related situation, or to predict what should come next, or to tell what the more remote implications of the situation are.
3. Reading to execute precise directions. This test measures a type of reading now commonly called a work type such as is essential in arithmetic, directions for using objects, and all sort of informative material.
4. Reading to secure significant details of the passage. This test requires another work type of reading in which something more than the general idea is required. The subject here is expected to detect and isolate the facts relevant to more reasonable issues or problems.
5. Gray's Oral Reading Test, which measures the ability to get both form and substance of the passage while reading aloud. It is, of course, now well known that silent reading and oral reading are, in many respects, different composite skills.
6. Graded Word Pronunciation Test, designed primarily to measure ability to work out the meaning of words by study of the word form without the use of the context. When used in conjunction with Gray's Oral Reading Test, this instrument shows the teacher the degree with which the pupil depends upon context clues on the one hand and word-form clues on the other in working out the perception and meaning of words.

Tests of these sorts make possible an objective diagnosis of special strengths and weaknesses. When they are all standardized on the same pupils, it often appears that a particular child is very well developed in one type of skill but relatively weak in another type of skill, although his average may be satisfactory. The test results yield a profile of attainments and give the teacher a clear indication of special needs. The tests are, in other words, objectively diagnostic. The use of such tests in the various subjects should form a part of the teaching program in every school. Such a battery of tests should be given two or three times a year.[2]

STANDARDIZED DIAGNOSTIC TESTS

The tests just described should satisfy the requirements of good instructional content and form. There is another type of diagnostic test, however, in which these requirements cannot be made and should not be sought. There occasionally occur difficulties and de-

[2] Such a series of tests for reading is published by the Bureau of Publications, Teachers College, Columbia University, New York City, under the title of *The Gates Reading Tests* for Grades I to VIII.

ficiencies which can be revealed only by more heroic measures. Perhaps this can be made somewhat more clear by an analogy with diagnosis in the field of medicine.

If a person has had an acute or chronic intestinal disorder and goes to a specialist for diagnosis, he is likely to receive something like the following reception. He may be asked to appear at the doctor's office at nine o'clock the following morning without having eaten breakfast. He may then be asked to eat a small biscuit and drink exactly one glass of water. After waiting for an hour, a tube may be thrust down his throat, and the contents of his stomach removed in a not altogether pleasant way. He may then be asked to drink a glass of very heavy and rather unpleasant mixture of buttermilk and barium. He may then be put before the fluoroscope for detailed examination. Everyone, of course, understands that this is a diagnostic procedure, and not a therapeutic measure. If the man imagines that the things the doctor does to him are to serve as examples of the treatment he is to receive to remedy his trouble, he will grossly misunderstand the procedure. Diagnostic materials and measures bear no necessary resemblance to the therapeutic regimen.

Educational diagnostic tests have been criticized on the ground that they do not exemplify good classroom practices. There is no more reason to apply this logic to diagnosis in education than to diagnosis in medicine. In both fields, the diagnostic funcion is sometimes entirely distinct from but a necessary prerequisite to proper treatment. Diagnostic devices are certain to be more fully developed in education and fortunately, on the whole, they will be quite as effective but very much less unpleasant than those we are accustomed to receive from the hands of the medical diagnostician.

C. T. Gray, W. S. Gray, Laura Zirbes, and others have been developing diagnostic techniques in reading. Many of these materials call for reactions that look different from reading. For example, phonetic skills may be measured by requiring reactions that a teacher would not expect a child to practice in the schoolroom. Visual perception is measured by asking the child to discriminate between groups of non-sense drawings, or digits, or non-sense words. The associated processes are appraised by requiring children to identify pictures or sounds which have been associated with geometric drawings. It seems that no sane teacher would expect that, because the diagnostician had used such means, she would make a good reader of a child by having him do further work of these types. The purpose of the test is, of course, to reveal aptitudes on the one hand and deficiencies on the other. The purpose of the test is also to reveal the

child's powers and to relate instructional work of the class to them.[3]

In education as in medicine, prevention is better than cure. It is desirable to detect special difficulties and susceptibilities as early as possible in order that serious difficulties requiring the attention of the expert and special diagnostic measures may be avoided. Consequently, various workers have endeavored to incorporate in the normal and desirable activities of the pupils' daily work, materials which will provide informally but none the less effectively, a diagnosis or picture of strengths and weaknesses. To do this successfully, of course, demands very great ingenuity in order to secure reliable measurements without interfering with, or in any way reducing, the value of the regular schoolroom work.

Some of the older efforts in this direction such as the practice-exercise procedures in arithmetic were seriously defective on many counts. In nearly all of the earlier programs, the work was rather barren. It was lacking in application. It was deficient in correlation with more wholesome activities. It was not well integrated with the wider uses of the skills. Many of the programs failed to avoid the tension and nervousness which is the almost inevitable result of being continually measured on a competitive basis. Tension was produced by having a large number of time tests. Emotionality was aroused by a continual display of scores on a competitive basis of some sort. Some of these devices, useful in moderation, were greatly overused.

INFORMAL TESTS OF SPECIFIC ATTAINMENTS

What we now seek to do is to get rid of all the disadvantages of the older rigid programs. The present point of view is that of setting up, first, the best program of activities in the subject that can be set up without regard to the matter of diagnosis and tests, and then to work into this program, without changing its characteristics in any way, devices that will give a useful diagnosis. It is apparent already that such a hope may be achieved. I shall try briefly to illustrate the results of an effort in this direction in the case of reading in the first three grades.

The procedure consists first in setting up the most approved reading objectives and then of arranging a series of activities by means of which these objectives will be realized in the most interesting, wholesome, and effective manner. A survey of present reading

[3] A series of diagnostic tests for reading is described by the writer in a volume, *The Improvement of Reading* (New York, Macmillan Company, pp. 358-422). The tests are distributed by the Bureau of Publications of Teachers College, Columbia University, New York City.

objectives shows the need for developing recreational reading and a variety of work-type readings. A means recently adopted to secure both of these needs in the most wholesome and effective way consists of providing, instead of the traditional reader combined with a group of miscellaneous phonetic exercises, flash-card materials, blackboard materials, and a variety of other supplementary drills, two printed books, a reader and a work book. The reader provides primarily for the free exercise of recreational reading. The work book provides in part for recreational reading but mainly for developing all of the fundamental equipment both for recreational and for other types of reading. The work book should serve a variety of purposes. It should introduce the child to many new words and give him experience in using them in various useful and interesting contexts to the end that he may master thoroughly a desirable reading vocabulary. It should also give the child information and interests which serve as a background for greater understanding and appreciation of the stories in the reader. After the child has read the story in the reader without interruption, just as an adult likes to read short stories, he returns to the work book and is given an opportunity to express the ideas developed in the story. In this way his interests and concepts are refined, applied, and enlarged.

The work book should assume the main responsibility for developing the various mechanical reading skills such as the ability to work out the meaning and the pronunciation of words on the basis of context and word-form clues, the ability to see several words at once in thought units, the ability to read with a wide eye-perception span, the ability to read with uniform eye-movements, and the like. The work book undertakes to develop these skills in the actual process of reading for the thought instead of any conventional systems by barren phonetic and other drills in the supplementary period. It develops the various work devices of reading such as reading to understand precise directions, reading to get the answer to questions, and various types of techniques of thinking and study.

The work book should also provide the means of developing many other educative skills such as ability to interpret and use maps, to select and decorate suitable illustrations of passages, to plan such projects as making a news sheet, or preparing a festival, decorating the schoolroom, or putting on a little drama in connection with some general topic which is being developed simultaneously in the reader and work book. In addition to serving these various purposes, the work book should be so arranged as to test from day to day, the ability properly to recognize and understand words, to exercise the

different necessary types of comprehension—comprehension of phrases, sentences, and paragraphs—to remember and apply ideas.

The work book, in brief, is designed to teach and test simultaneously. Its primary function is to teach, but it tests simultaneously without secondary ill effects. The child finds himself engaged in a series of interesting activities to which reading makes a great contribution. It is the means of directing the child to interesting stories, useful information, and various artistic, constructive, and dramatic activities. The child is not only unaware of being tested, but he is also unaware of being really taught. He does what the situations call for, and they should and can call for interesting and vital activities, while learning and measurement are the natural results.

It is already apparent that such materials can be so organized as adequately to test attainments and reveal difficulties before they have got far under way without stress or strain on the child. It is not necessary to apply time limits or any rigid kind of procedure to the work. Children can work at almost any time and at almost any place. This is made possible by having the results measured chiefly on the basis of quality and accuracy. The standard is not some score or some attainment that must be achieved in a given time. The goal is a definable high quality and the standard of accuracy is 100 percent. The tests are so made that any error whatsoever is a thing to be detected and looked into. In other words, the standards are such that any child should meet if it is advisable for him further to function on that level. If he falls below this minimum standard, he should receive assistance or additional work on the same level. The materials should and can be so organized, furthermore, in such a manner that it is unnecessary for the teacher continually to correct the results. The children can compare and discuss their results with each other and thereby discover what misunderstandings or weaknesses have appeared. Indeed, the degree to which children do compare, discuss, and check up results is one of the most educative phases of the whole program.

The program of activities should avoid some of the other features of the older standard-test program. The child who makes errors is the child who needs more experience. Difficulties are invitations for assistance and encouragement and not for criticism and ridicule. Little value is to be gained, in my opinion, by a systematic display of scores, or any display of scores. The child soon learns to seek to discover the nature and causes of his difficulties.

Elementary Principals

Visiting the Classroom

B. R. Buckingham[1]

One of the most pronounced forms of job analysis is that of principalship. Dozens of lists, big and little, have been made which purport to show what a principal has to do. One "omnium gatherum" merges ten of the most extensive available lists into one more terrifying than any of the others.

In such a list it seems that every possible item which can affect a school is included. It is generally admitted, I suppose, that some ways for a principal to use his time are better than others. Presumably part of the reason why some principals are superior to others is because they somehow concentrate on the more essential of these hundreds of activities. Therefore, a standard of values is needed before the best use can be made of such a list of activities as I have mentioned.

In the first place, the list needs pruning. Not all the things which drastic by-laws and regulations from headquarters require ought to be required. Then too, many of the items on the published lists of principals' activities are there merely because individual principals, peculiarly placed or loving petty routine, reported them. Such items serve no good purpose on even an "omnium gatherum."

Let us consider some of the types of items found on such lists. Some of them, such as responsibility for the use of the building by outside agencies, are not activities at all, while others represent activities which should be performed by some one but not by the principal. Setting the office clock should be the task of the janitor, and keeping a record of tardy pupils should be the duty of the teacher. Still another group of items represents activities which should be either abolished or reduced. They may stand for the crotchety idea of somebody at headquarters, or they may be mere officialism spending itself to no effect. The daily reporting to the central office of all teachers who are absent or late, for instance, is an activity that ought to be reduced.

Finally, if one were pruning a master list of principals' activities, the largest opportunity would be found in the class of items for

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which the principal should be responsible but which he should delegate. That is, he should delegate them if he uses to better advantage the time thus released. If an activity is really desirable, then it becomes the principal's duty to see that it is performed. The clerk, the assistant principal, and the teachers—in smaller schools the teachers alone—may and should be called upon to do some of the things for which the principal is held accountable.

Now, by common consent, the kinds of activities which merit a high degree of consideration are those which concern themselves with the improvement of instruction—or more accurately stated—those which concern themselves with the improvement of learning on the part of the pupils. It is true that this is a question of degree. All activities—even those clearly recognized as administrative or clerical—should be performed to promote better teaching and consequently better learning. Accordingly, an adequate selection of the paramount duties of the principal will not permit dichotomous classification even of "indispensables" and "dispensables." The question is rather one of degree of emphasis. In practice, however, we feel that certain duties are so immediately and unequivocally related to the improvement of the relation of teacher and pupil that they are of first importance. These duties we call supervision.

Some of these supervisory duties are concerned with fact-finding, others with the use of facts after they have been found. Among the methods of finding facts for supervisory purposes the classroom visit is of large, though by no means of exclusive, importance.

You will gather that I do not—as some appear to do—consider classroom visiting and supervision as synonymous. I recall that at one time while I was a principal in New York City, a drive from headquarters was made to secure supervision on the part of us principals. But the sole idea of all concerned, seemed to be to spend as many hours a day in the classroom as was humanly possible. Principals carried notebooks about with them, but all I ever saw displayed in them was the time they spent in this room and that, and the total for supervision—so-called—for the day or the week. What they did while they were in the classroom seemed not to matter. What facts they gathered as to the doings of the teachers and pupils seemed to be immaterial; nor did I ever hear them boast of the use they made of these facts in conferences with teachers, pupils, or parents, or in modifying their own policy. Indeed these principals had no time for conferences, no time for using their facts in formulating constructive policies, for such action must have been carried on in the office, and no term of disparagement was at that time more dreaded than the term "office

principal." Although the story is not mine to tell in this connection, I wish to remark in passing that whether a principal who is in his office much of the time is a good or bad principal depends upon what he does while he is in his office. Contrariwise, whether a principal who spends much of his time in the classroom is a good or a bad principal depends not on where he is but on what he does, what he gets, and what use he makes of what he gets.

Of course, the classroom visit is much more than a fact-finding procedure. In his relations to both pupils and teacher and by his participation in the activities of the classroom, the principal may do more than gather data. But, in the main, the visiting of the teacher at work is for the purpose of learning what the teacher and pupils are doing and observing the conditions under which they are working. Considered in this light, classroom visiting is not supervision at all. It is merely a getting ready to supervise. The facts collected are not themselves effective. It is only as they are interpreted and put to use in the improvement of teaching and learning that they become instrumental in supervision. This, however, does not belittle classroom visiting. On the contrary, it places it, in a sense, in the first position—first in point of time. If, merely as fact-finding, it is held to be non-supervisory in its nature, it is nevertheless a *sine qua non*—an activity without which no vigorous program of supervision is possible.

In what I have to say further, I shall confine myself to the facts which may be learned in the visit to the classroom. Without entering into the rather perilous field of the definition of a fact, I observe that facts may be of two kinds: namely, those which are objective and those which are subjective. By objective facts, I mean those which in their extreme form are not subject to opinion, those about which observers equally competent and with equal opportunity to observe will not differ. For example, the statement that I entered Room 203 at 9:30 when Miss Brown was teaching a fifth-grade geography class is an objective statement, a statement on which there will be substantial agreement as to its truth or falsity. A subjective fact is one which is based upon opinion, judgment, or inference—the warrant for which indeed may often be objective data—but about which people may differ according to their interests or their prejudices or their philosophy of life. If I say that Miss Brown did too much talking during the geography period, I make a statement which Miss Brown, even with the same objective grounds in mind, may deny. I am, of course, aware that there are all stages between objective and subjective and that few facts are either purely

the one or the other. But allowing all that, I maintain that the distinction is evident in meaning and useful in application.

If the principal, in his classroom visit, obtains data of an objective character, several important purposes are served. In the first place, at the conference which he will hold with the teacher, much of what took place is removed from the area of doubt and debate. His commendation is felt to be genuine and not merely sentiment or policy, because he has certain sure grounds for it. His disapproval and his suggestions for improvement get a hearing for the same reason. In the second place, the principal's training of his teachers in service, as this may be carried out in general and group meetings and in the assignment of readings, will be more effective because they will be less subject to his personal whims and caprices. In the third place, his supervision as it extends over the entire year has the advantage of comparison between facts obtained at different times. In contrast, the comparison of subjective data is always difficult and uncertain. In the fourth place, if a question arises as to the promotion, the transfer, or the dropping of a teacher, he may support or oppose the contemplated action by evidence which is convincing. In all this it is, of course, assumed not only that the principal has secured objective data but also has systematically recorded them.

The objective facts which a principal may secure in the classroom are more numerous than is generally supposed. Some of them are often omitted from the principal's record because they seem and, indeed, are trivial while the visit is still fresh in mind, but they become important later when compared with similar data gathered over a period of time. Such facts are the name of the teacher, the date, the hour of entering and leaving the room, the subject and grade, together with the name of the class if the grade name does not sufficiently distinguish it.

It may be well at this point to dispose of the question of certain physical conditions—temperature, humidity, ventilation, and lighting. Although humidity, ventilation, and lighting are susceptible of accurate measurement, the schoolroom does not ordinarily have the required instruments. Temperature readings, which are generally practicable, are of little consequence unless the room is obviously too hot or too cold. For my own part, I have made a record of these conditions only if they were abnormal, and even that was usually subjective.

Before going to a class, a principal should make certain arrangements to facilitate his classroom visiting and to make it possible for him to objectify his information. Shortly after the term opens, I

should have each teacher furnish me a seating plan of her class, outlined on a printed blank on which the name of each child would appear in its proper square.

After the name of each child on the seating plan, I should ask the teacher to enter the child's age and his intelligence quotient if the latter were available. I should not, of course, require the teacher to adhere to this seating plan, but I should require her to keep the office chart up to date so far as permanent seating arrangements were concerned. I should bring a copy of this chart with me to the classroom and have it corrected according to the conditions of the moment. This chart, with certain entries which I, as supervisor, should make, would constitute part of my record of the visit. I should also request each teacher, soon after the opening of the term, to furnish me with a time-table of her work. I should expect her to depart from it for good reasons, but I should expect her to have a reason and to be willing to state it. In connection with the classroom visit I should, either during the visit or afterwards from the seating plan, record such data as these:

1. The size of the class
2. The grouping of the class if any exists for the subject taught during the visit, including the number of pupils in each group
3. The average age and intelligence of the class and of each group
4. The diversity in age and the diversity in intelligence for the class and for each group

Two of these items require further comment. I regard the size of the class important for many reasons. If the evidence is that the teacher is doing high-grade work—and the evidence on this may or may not be objective—then her service is obviously more productive if it is rendered to forty pupils than if it is rendered to twenty. In my judgment there is one ability in teaching which we are neglecting, namely, the ability to teach a large class effectively. A teacher who can reach each individual in a class of forty is a more valuable teacher than one who may be able to do this to an equal degree but who cannot do it for more than twenty-five children. Moreover, there is another aspect of this question of size of class. If a teacher's showing in some particular is not as good as the average or not as good as someone else's, it may be because she has an over-sized class. Yes, decidedly we shall want among our objective data the size of the class.

The second item deserving comment is class variability in age and capacity which is even more important than class-size. Indeed, the large class is frequently hard to teach, not because of its size, but because of the range of talent which it entails.

For use in supervision, additional facts of a more significant character may be objectively noted and recorded. Some of these may be listed and classified as follows:

I. Matters that may be expressed by time—
   A. The time required
      1. Before work begins
      2. In passing materials
      3. In non-productive, though perhaps necessary, ways, such as passing to the board
      4. In trying to get one pupil to understand
      5. In review of the previous work
      6. In discussing today's topic
   B. Division of time between teacher and pupils

II. Matters that may be counted—
   A. The number of pupils who participated (code for each)—
      1. By answering questions:
         a. When called upon
         b. Voluntarily
      2. By doing something:
         a. When called upon
         b. Voluntarily
      3. By asking a question
      4. By helping another pupil
      5. By contributing a statement
      6. By paying attention (at stated intervals)
   B. The number of participants above and below the average intelligence quotient
   C. The number of responses correct or satisfactory
   D. The number of responses incorrect or unsatisfactory
   E. The number of incorrect responses accepted without challenge
   F. The number of questions asked of pupils by the teacher—
      1. The number of leading questions
      2. The number of "yes" or "no," or other alternative questions
      3. The number of factual questions
      4. The number of questions asked requiring thought
   G. The number of times the teacher repeated an an answer
   H. The number of certain type errors of speech (might have a check list for each grade)

III. Presence or absence of—
Plan book, if required
Statement of aim or point
Summary
Serious digression or wandering
Serious interruption
Adherence to schedule
An assignment
A filing system

IV. Quotation—
A. Of forms of expression technical to the subject; for example, in second-grade arithmetic form or forms for subtraction
B. Of good questions—and of bad
C. Of materials when practicable; for example, the words of the spelling lesson, or a sample problem in the arithmetic lesson

V. Other objective facts—
A. Textbook, name of, and page references
B. Additional readings, if any
C. Material, other than reading, or apparatus used
D. Sample papers for example, (perhaps, ten chosen at random)—
1. Home work
2. Done in class
E. Concentrating attention on one pupil

The list of objective data one may secure in visiting a classroom is evidently long and detailed. Only a part of it, however, may be obtained in any one visit. Some of the items I should always want to get. Others I should secure only occasionally and according to my specific purpose.

This brings me to my last point—a point which I might have made in the beginning. I may call it the context of these objective data. In the first place, one must not suppose that such data are all that the visit should yield. Subjective impressions are often more important than objective information, only one cannot use them with the same assurance. All such facts, if communicated to the teacher, should be understood to be offered merely as the judgment of the observer. In the second place, the purpose of the visit should be carefully planned. One ought not to be satisfied with sauntering into a room and draping one's self over a radiator for a few minutes. One ought to distribute visits according to a plan—a plan in which the strong and weak teachers, the experienced and inexperienced all

receive consideration. Under some circumstances the principal may contemplate visiting by subjects, under other circumstances, by grades. Again, one may visit for the purpose of furthering some policy which the school has agreed upon. The facts which one collects will be affected by these considerations. Finally, the visit is to be thought of as preliminary to a conference—or occasionally some other form of communication—and this conference as preceding another visit, and so on. From such a succession of fact-finding and fact-using arises leadership, in-service training—in short, a high form of supervision.

Improvement of Teachers in Service

J. J. Richeson[1]

The improvement of teachers in service is next in importance to the careful selection of new teachers for the schools by the superintendent, or someone to whom such selection is delegated. A system of cadet teaching for the improvement of the inexperienced teachers is advocated. Under this system the cadet teachers should receive less than the established minimum salary—perhaps three hundred dollars—for two years; and the money thus saved should be used to employ well-prepared and successful critic teachers.

The critic teacher should go over the plans, purposes, and methods of procedure with the cadet teacher; watch her through her recitations; and discuss constructively with her the work observed. The critic teacher at frequent intervals should teach for the cadet teacher, the better to exemplify her meaning. The cadet teachers should be assembled as far as practicable in groups within a building so that the supervision of the work may be more readily done. The scheme here proposed is to take normal-school graduates without experience into such a system, and to train them specifically and carefully for the work they are to do. This is thought to be better for all concerned than to take them from some small school where they have in many instances been forced to teach for experience.

Not only the inexperienced teachers, but all teachers, need improvement. This statement is not to be construed as meaning that teachers are not doing their work well, but that there is no such thing as perfection no matter how diligently we may strive for it. It may be taken to mean, too, that although some teachers are the best in the system, nevertheless, on account of their alertness, eagerness, and skill they will probably make the greatest growth.

[1] Superintendent of Schools, Youngstown, Ohio.

The observation lesson is the means best suited to the teachers working in such a system. It is next to criminally negligent for those having charge of the supervisory work to allow many wonderful lessons observed go unseen and unheard by the teaching body. In order that such loss may not be sustained, it is advocated that a plan of observation lessons be worked out. These lessons are to be of two kinds. One is the lesson planned beforehand to depict a certain type of teaching, to show a certain method, to develop certain subject-matter. Teachers may be told in advance what to expect in such lessons. The other type, however, is the one that the supervisor just "picks up." It is a lesson in which the teacher is at her best. It is reproduced for the group of teachers in order that they may catch the inspiration. Observation groups should not be too large, for that would naturally interfere with ease and spontaneity in the recitation. Every class recitation so presented should be discussed. The discussion should be opened by the one who conducted the recitation, and this followed by a general discussion which the teacher should be permitted to close. The whole discussion should have for its aim constructiveness and growth—the only proper aims of supervision.

The amount of growth possible to a corps of teachers is hard to estimate, but its efficiency may well be doubled and redoubled. If each teacher, principal, and supervisor carry something new and important away from each lesson observed, and each then proceeds to put into practice what he has added unto himself, it is, indeed, difficult to estimate the extent to which such inner growth may reach.

The great purpose of demonstration work is to create in the minds of the teacher a desire to do better teaching and a belief in her ability to do it. In no other way can great improvement be had. It is not something that can be forced from without; it must come from within. The great purpose, then, of all supervision is to inspire within the hearts of the members of the teaching force the desire to do better work, and the result most to be desired from the demonstration work is to show them how to do it.

Testing as a Function of Teaching

George R. Johnson[1]

When a physician is called to diagnose a case of illness he measures the temperature of the patient, counts the pulse, tests the blood pressure, and makes any other scientific tests or examinations which

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the nature of the case requires. When he leaves the case in charge of a trained nurse, it is expected that the nurse will keep a temperature chart and a record of any other tests or measurements which the doctor may prescribe. It is a singular fact and a great compliment, I take it, to the medical profession that no one ever questions the integrity of doctor or nurse, either in giving these tests or in utilizing their results.

To me it is one of the most puzzling circumstances in the profession of teaching that no such confidence in the integrity of teachers seems to exist. Even such a notable student of education and testing as Dr. Truman L. Kelley, whose latest book on educational measurements I personally consider one of the best contributions which has been made in this field during the past two years, has assumed, without any presentation of evidence in that volume, that teachers are incapable of giving, scoring, and utilizing test results. [2] I have expressed my own opposition to that view in a recent issue of the *Elementary School Journal*.[3] Dr. Kelley has reference to teachers who "have had no training, or only such training as might be given by the superintendent or principal verbally, at a teachers' meeting or in a circular letter;" but even with this restriction the statement constitutes, in my judgment, an unwarranted insinuation against the teaching profession. If I may return again to the illustration of the doctor and the nurse, I would call attention to the fact that full confidence is placed in a nurse's ability to take and record the temperature of the patient as the doctor instructs her to do it, even when his instructions are merely verbal.

Dr. Kelley's attitude is mentioned merely because it is a clear-cut illustration of the case as given by a leader in the field of tests and measurements and constitutes, in my mind, a typical and wide-spread attitude which I have met continually and opposed consistently for six years while directing the testing work in St. Louis. I have found numerous supervisors who will not accept, in good faith, the results of educational measurements obtained by classroom teachers. I have encountered many principals who believe that if they are to have results on which they can rely, they must either do the work themselves or have an expert from the Division of Tests and Measurements obtain the results, thus creating an extraordinary situation by introducing a stranger into the classroom testing.

[2] Kelley, Truman Lee. *Interpretation of Educational Measurements.* Yonkers, New York: World Book Company, 1927. p. 45.

[3] Johnson, George R. "Honesty of Teachers in Testing," *Elementary School Journal*, 29: 198-292, November, 1928.

We have found through experimental effort in the city of St. Louis that teachers are both competent and honest in the use of tests. In a city-wide survey of penmanship the results of the tests administered and rated by teachers proved upon investigation to be as accurate, for survey purposes, as were the tests given by penmanship supervisors and special examiners. [4] Since that time numerous surveys have been made through tests applied by teachers, and numerous checks have been made to ascertain the reliability of the work. Every added experience has increased the conviction that testing can be done as accurately by teachers as by trained examiners.

In any test where oral instructions by the examiner are required for the various exercises in the test, it is my opinion that testing done by teachers is even more reliable than testing done by technical examiners who are unknown to the pupils. The understanding which exists between teachers and their pupils constitutes a distinct asset in the administration of such tests. The uniformity which is obtained by having tests given to numerous groups by one trained examiner is only a superficial uniformity. Individuals differ from one another and groups differ in respect to their responsiveness and in respect to the kind of stimuli which are needed to bring forth the best efforts at all times. Teachers who know their pupils intimately and who understand these differences in responsiveness can secure more accurate results, through applying certain necessary adaptations, than a stranger can secure by a superficially uniform application of the test in one visit.

If we grant that testing can be a function of teaching because the competency and the honesty of teachers permit it, I desire to suggest some of the reasons why it should be a function of teaching. The proposition, however, seems to me almost self-evident. Every workman applies the necessary tests and measurements for accurate guidance in his work. A bricklayer plumbs the wall which he is constructing; a carpenter measures the lumber before he saws it; the ditch-digger measures the depth and width of his ditch; the tailor measures the cloth which he cuts by pattern. Is it not most logical that the teacher should measure the abilities and the progress of the pupils whom she instructs? It is merely a matter of recognizing the fact that a teacher is a skilled workman, that tests are scientific tools by which instructional needs and educational progress can be measured.

[4] St. Louis Public Schools. *"Report on Survey of Penmanship," Sixty-Ninth Annual Report of the Board of Education of St. Louis, Missouri.* St. Louis, Missouri: Board of Education, 1923. pp. 22-46.

It is the most common fault of principals, supervisors, and superintendents to assume that teachers are not to reason why but merely to do and die in applying a curriculum and methodology sent down to them from above. I sometimes wonder if the fear to permit teachers to use scientific tests really is not based on an unrecognized realization that these inanimate instruments may suffice in a large measure to displace the kind of supervision which has formerly existed.

HARMFUL INFLUENCE OF THE GRADE NORM

Many supervisors and school principals are so obsessed with the idea of high standards that a test score in their hands becomes a distinct danger to education. The obsession for supernormal scores in the schoolroom is really a startling condition. I suppose no physician or superintendent of nurses in a hospital ever aspires to have the highest temperature readings, or the highest blood-pressure tests of all the hospitals in the city; and yet our educators too frequently have such aspirations regarding all kinds of scores obtained in the classroom, regardless of the nature of the scores or the element which is measured. School people have so long cherished the grade norm that principals are occasionally found who are willing to retard children in the primary grades until they are gray-haired if necessary, in order to get a test score above the norm. It seems never to occur to them that there might be other and more important measures applied to the educational success than the standard—the grade norm.

Any insistence by principals or supervisors that teachers bring their students to median or super-median scores in tests where grade norms are used tends to wreck the nerves of the teacher and to create, for the children, a stultifying situation in the classroom. In general, the purpose in the use of tests is to improve the educational situation for the particular child which is tested. Benefits will not accrue to a child by homogeneous grouping, segregation, retardation, accelerated promotion, or any other kind of administrative device, except in so far as the device contributes to an improvement of the conditions upon which learning depends. If the teacher is given sufficient liberty in adapting the curriculum, sufficient freedom in exercising her judgment as to method and technique, the teacher will be able, herself, to diagnose most of her educational problems by using the various available tests and to apply the needed remedies.

Principal and supervisor will help the teacher, of course, to interpret test results. In fact, it is always helpful to a teacher to consult any one who is informed technically in the field of education in order to apply the necessary checks to her own judgment. It is desirable,

however, in administering and supervising education to look to the teacher as the central figure in any testing program. Let it be the teacher who gives the test, who studies the results, and who makes use of them for the improvement of the educational conditions of the child. Administrative action should be based upon the teacher's finding of need for the child rather than upon any theoretical or philosophical view held by the administrator; and the teacher should not be hampered in her finding of need by any arbitrary insistence upon grade norms.

RELATION OF TESTING TO SUPERVISION

The philosophy of supervision which assumes that teachers can ascertain what their successes and their failures are only when told about them periodically by the visiting supervisor is antiquated. Through the use of tests the teacher may determine, scientifically, in any moment of doubt, what her strength or her weakness is in any particular direction, may know by her own accumulated evidence whether she is succeeding or failing in a particular task. The older supervisory function of pointing out successes and failures is being discarded in favor of an intelligent program of testing. This is not to say that the supervisors of the school system need not be continued in service, but it is to say that in the face of this new supervision-saving device, the test, supervisory positions should be justified on the basis of new functions.

Here is a single illustration taken from the records of a classroom teacher during the past year. The teacher applied all of the tests herself, scored the papers, organized the results for her own interpretation, and applied subsequent instructions as she found suitable after such consultations as she wished to make. Pupil No. 29, whose intelligence quotient was 100, was examined at the beginning of the year, again in midyear, and again at the end of the school year in all subjects. The record of his abilities and progress in three subjects is shown in Table I, and it is typical of the record obtained by this teacher for all pupils under her instruction. The rate of growth in each subject in relation to the progress in other subjects is readily seen. The complete record of each pupil includes all subjects studied. With measures recorded for each child in the class, the teacher knows where emphasis is needed, where special help is appropriate, where problems are to be explored. Thus, she gains more intensive, more accurate, and more scientific guidance in her work than can be obtained from the casual inspection made by any school supervisor during the usual brief visit.

Obviously the mental rating of the pupil cited here is an important factor for the teacher's consideration. Achievement can be interpreted justly and adequately only when the mental rating of the learner is taken into account. Teachers understand this and they are anxious to apply mental tests as well as achievement tests; it is highly important that they do so.

Early in the mental testing movement, administrators grasped at the opportunity to classify pupils in accordance with new criteria. As a result, the country saw a large spread of X, Y, Z classes, or other designated ability groupings. The administrative use, however, offers probably the least valuable of all the uses of mental-test scores. It remains an unsolved question as to whether homogeneous grouping or heterogeneous grouping will afford the best educational returns.

TABLE I

PROGRESS RECORD OF PUPIL NO. 29 IN ARITHMETIC, LANGUAGE, AND READING

	September	January	May
(1)	(2)	(3)	(4)
Chronological age	14- 1	14-6	14-10
Mental age	14- 1	14-6	14-10
Arithmetic age	14-11	15-9	16- 6
Language age	14-11	17-6	17-11
Reading age	14- 8	15-7	16- 1

Experimental trials with both kinds are being seriously attempted in various parts of the country. Homogeneous grouping is based upon the principle of mass teaching. It presupposes fixed standards of promotion from grade to grade and a uniform rate of progress for all members of a class. If the right of children to individual rates of progress, individual interests in knowledge, and individual needs with respect to procedure becomes fully and adequately recognized, homogeneous grouping on the basis of intelligence quotients may possibly become obsolete.

Undoubtedly, the most valuable of all the uses of mental test scores is that made by the teacher in a careful diagnosis of individual needs. It is important that the teacher charged with the instruction of a child be able to understand that child's difficulties, his ability to grasp and comprehend the problem at hand, and the causes of his

particular reactions to a given situation. Teaching becomes a science as well as an art only when such understanding is present. Without the aid of a mental test the teacher is compelled to guess at the inherent ability of the child. She can do this with a fair degree of accuracy many times just as a physician might successfully guess at the degree of fever in a patient. But the presence of an accurate measuring instrument lends certainty to the teacher's work just as it does to the physician's. Unless mental tests are serving the teachers in the matter of gauging accurately the kind and quantity of work to which their pupils are assigned, the scores may be considered of doubtful value.

More and more teachers are demanding an opportunity to know exactly the mental ability of the pupils that they are required to teach. Not only do they seek to know the so-called general intelligence rating, the intelligence quotient, but they seek in ever greater numbers each year to know the special ability ratings of their pupils. Music teachers want to know the scores on the Seashore test as well as the Binet or the Terman; mechanical-arts teachers want a mechanical-aptitude test; and so forth.

TEST SCORES AND PERSONAL JUDGMENT

The results of tests are never to be construed, of course, as infallible guides for action. They are merely aids to judgment. In my experience, I have found teachers better able to understand this fact and apply it than any other group of educational workers. Teachers maintain daily personal contacts with the children, and the very circumstances of their association compel a recognition of factors that must be considered. It is the administrator or the supervisor who is most likely to err in accepting a mere figure obtained from a standard test as sufficient ground for action.

Take for example some of the following illustrations drawn from our testing records:

1. Boy—Twelve years of age; I. Q., 100; mental age, twelve; arithmetic fundamentals, Grade IV; reading ability, Grade I.
2. Boy—Sixteen years of age; I. Q., 75; mental age, twelve; finished eighth grade in upper quartile of scholarship rank; admitted to high school.

The teacher who happens to have two such cases to teach understands that some other factors besides the intelligence quotient are at work in the education of these two boys. Only theorists could possibly decree that the first boy belongs to a normal group and the second boy to a subnormal group on account of the intelligence quotient

rating. Furthermore, it is the teacher in daily contact with such pupils who needs to know the measured ability of the pupil in order to give due consideration to other factors which are operating.

One of the greatest handicaps to the progress of the testing movement at the present time is the tendency of some teachers, but more often the tendency of principals and supervisors, to act arbitrarily upon a test score. Such action seems to me to be analagous to a preposterous situation which would exist if the family physician classified all patients as pneumonia cases when their temperature reached 102. The fact is that in teaching a child every possible measurement of ability and progress should be obtained; and the decision to act on behalf of the child should always be made in the light of reason. Test scores cannot, under any circumstances, excuse one from exercising his best personal judgment. Mechanical management of children in education can never be made to supercede a common-sense management; but a common-sense management can be greatly improved by a consideration of various scientific tests. One of the most important duties of a director of tests is to keep people who use test scores from interpreting such results too seriously and too mechanically. Classroom teachers are shielded largely from this danger by their possession of personal knowledge of each pupil. They are forced to think twice before acting when the scores of the test run counter to their experience.

IMPORTANCE OF PEDAGOGICAL ADAPTATIONS

A further and final argument which I shall offer here for the construing of testing as a teacher's function is the necessity of adapting the administration of tests to the prevailing pedagogical conditions. For example, if the purpose of the test is to find out how well the pupils can divide, not how well they can understand an unknown terminology, it is necessary to instruct the children to divide; only the language which they are accustomed to use will suffice to do this. Too frequently the technical examiner, or any stranger to the group tested, will give directions in a standardized language that is unknown to the group. Under such circumstances the group will naturally make a low score, yet it cannot be said that a measure has been applied to the knowledge or skill in question. The test has been merely a vocabulary test with only a single word or phrase involved. Classroom teachers instinctively avoid such errors.

Again in the matter of tabulating and graphing results, the work for practical purposes in the schoolroom must be done on the level of understanding of the teacher and pupils. The expertly trained

statistician too frequently introduces, for scientific refinement, measures which are difficult to compute and impossible to apply in the educational work of the school. Such measures are needed, of course, in the refined work of the laboratory or in scientific research, but they are useless in the classroom. Testing for the practical purpose of improving education, therefore, should be free from tedious and technical scientific procedures. Society has been forced to a recognition of this fact in the world of physical measurements. We read with wonder of the exactness of measurement by which a noted physicist ascertains the speed at which light travels and proceeds to refine and correct the measurement to the *n*th degree; but we never expect the butcher, the grocer, or the coal dealer to use any such exact measurements in weighing out our purchases. Any attempt to make the practical measurements in the business world so refined as the physicist's measurement of the length of light waves or the speed of light would constitute an insurmountable obstruction to the transaction of business. It is equally true that the scientific testers throughout the country tend to obstruct the practical work of education when they insist on putting into the schoolroom a technique which does not stand the test of pedagogical practicability. From this point of view, therefore, the work of testing is safely placed in the hands of teachers. Their standards of pedagogical appropriateness are well developed.

In conclusion, it has been my purpose to say, without prejudice against the work and proper functions of expert examiners in a bureau of tests, without prejudice against supervisors or principals in the field of instruction, that testing can be and should be a proper function of teaching. It can be, because teachers are competent and honest in the performance of this function. It should be, because testing in the classroom is a justifiable expenditure of time and effort only when it serves to improve the work of the classroom, and because the teacher who is constantly guiding and controlling the work of education at this vital point must be in full charge of the scientific instruments for guidance. The testing work will find its rightful place in practical education only when we look to the teachers to do the testing, to name the needs which they discover, and to apply the remedies.

A centralized bureau of testing must justify itself as a bureau of service. It will conduct surveys for administrative guidance; it will direct controlled experiments and do experimental testing, not for the purpose of educational guidance of the pupils tested, but for the discovery of facts which will have general worth to many teachers; it

will construct and validate tests to be used by teachers; it will develop improved techniques to facilitate the work of testing throughout the system. What it must not do, however, is to usurp any function which properly belongs to the teacher.

Elementary Teachers

An Evaluation of Education in Thinking

FRANK N. FREEMAN[1]

BEFORE attempting to evaluate the success of the school in training the child to think, we should know something regarding the possibilities of training in this direction and also something concerning the methods which are suitable to give training in thinking. We should know something concerning the possibilities, because if it is not possible to improve the child's ability to think, we are not justified in expecting the school to improve that ability. If, as some think, the child's ability depends entirely upon his native endowment, nothing that the school can do will increase that ability; and nothing which the school neglects to do can be held responsible for the fact that it is not higher than it is. Again, in order to know whether the school is pursuing desirable methods, we must know what methods are suitable and what methods are not suitable. The first topic for our consideration, then, will be the possibility of training the child to think; our second, the methods and conditions which are suitable; and last, an evaluation of the achievements of the school in this matter in the light of the conclusions on the first two topics.

It would be desirable in the discussion of this topic to treat the first two phases briefly and devote the chief consideration to the third phase. It happens, however, that our scientific knowledge is more abundant concerning the first and the second phases of the topic than concerning the third. A number of scientific investigations have been made which have a bearing upon the possibility of the improvement in thinking, and we have some scientific knowledge concerning the conditions and methods which are favorable to the development of thinking. There have been no scientific studies, so far as I know, which have directly evaluated the present procedure of the school in training the child to think. Such a study could be made and it would be very desirable to make it. It would be a prolonged and difficult investigation, and it will probably be some time before such a comprehensive study is made. In the meantime, it will be necessary to base such evaluation as is made upon a rather casual observation of the procedure which is followed in the school. This will be the

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basis of the last part of my paper. I shall then discuss, first, the possibility of training the child to think, second, the conditions and methods which are favorable to such training, and third, the degree to which the school furnishes these conditions.

THE POSSIBILITY OF TRAINING IN THINKING

Can the child think?—If the child cannot or does not think, it is obviously not worth while to try to train him to think. G. Stanley Hall believed that the child below the age of adolescence does not think or at least that he thinks very little. The child is engaged chiefly in habit formation and in a memoriter form of learning. The child learns by imitation. His business is to absorb the life about him and not to blaze a trail for himself. Thinking appears at adolescence along with the sex instincts and the other attitudes which make up the transition from childhood to youth. If this theory of child development were true, it would obviously be useless to attempt to train the child to think. It is futile to try to train a person to do better a thing which he cannot do at all. On Hall's theory, training to think, if it is possible at all, is possible only at adolescence and maturity.

The scientific investigation since Hall's time has not borne out his theory regarding the child's inability to think. In fact, certain studies made under Hall's own supervision show that the child does think and thinks very vigorously. Lindley's study of puzzles, for example, showed that the interest in puzzles culminates at about twelve years of age. The interest increases up to twelve and decreases after twelve. This means that interest in problems of thought for their own sake, without practical motivation, reaches its high point at the boundary line between childhood and youth. This evidence indicates that the child thinks more freely and disinterestedly than does even the youth or the adult. Childhood is the period when one is untrammeled by personal and practical considerations and when one's mind is free to range over the field of thought and to follow the lead of curiosity wherever it may go.

It may be argued that this evidence bears only on the child's interest and not on his ability to think. On this point there is an important general consideration which we must keep in mind. In judging a person's ability to think, we must take due account of the limitations of his experience. Adults sometimes believe that the child cannot think, because he does not appear to be able to deal with problems which are expressed in terms of adult experience. For example, a child may be unable to grapple with such a problem as that

of graft in political life. The school sometimes errs, in my opinion, in undertaking to interest the child in subjects of this sort which are too far beyond his immediate experience. If, however, we examine the child on some question which relates to his dealings with other children or to his dealings with adults of his own immediate circle, we may encounter thinking of a precision and directness which astonishes us. If we keep in mind the necessity of testing the child's ability to think within the realm of his own experience or of experience which he has had an opportunity to secure, our observation will not bear out the belief that the child is incapable of thinking.

The scientific evidence on this point bears out the conclusions from every-day observation. I refer to the results of intelligence tests. The average score on intelligence tests, plotted according to ages, shows that there is a steady and almost uniform increase in the ability which is measured by these tests. While there is some dispute as to what intelligence is and what is measured by intelligence tests, and while intelligence tests do not measure thinking alone, psychologists would be pretty generally agreed that thinking is an important element in the mental processes which are measured by these tests. Some of these tests seem to be largely tests of association, with some testing of memory. But some of them are obviously dependent to a considerable extent upon ability to think out the solution of a problem. The ability of the child seems to show the same type of advance in these problem tests as in the tests of simpler association, as memory. If, then, it is possible to teach thinking at all, there seems to be no reason why we should not be able to teach the child to think as well as the older person. In fact, the natural curiosity of the child and his general susceptibility to training would lead to the conclusion that childhood may be the period when it is easiest to train thinking.

Can training in thinking be generalized?—The next obstacle to the conclusion that it is possible to train the child to think is the doctrine that training is specific and not general. According to this doctrine, it may be possible to train the child in the specific technique of solving particular sorts of problems, but it is not possible to give him the sort of training which will enable him better to solve problems in general. The pupil might, for example, acquire the technique of solving problems in geometry or algebra or a particular kind of laboratory problem. There might be enough identical elements between problems in the same narrow field to make the training carry over from one problem to another, but the transfer could not take place from problems in one field to problems in an entirely different field.

If this doctrine of specific training is correct, it sets a very narrow and definite limitation to the possibility of training the child to think. The tendency among psychologists, however, is to be much less dogmatic than was their habit in the early days of experimentation upon the transfer of training. There are a number of conceivable ways in which transfer may take place. The presence of identical elements is only one of these. Perhaps we may class information as one kind of identical element. Certainly, familiarity with the subject-matter which is involved in the solution of a problem will facilitate that solution. The development of a favorable attitude is now commonly recognized as important and as a possible if not a probable result of training. This is closely associated with the development of an ideal or a notion of the worth of a careful, painstaking, open-minded attack upon problems, as contrasted with slip-shod methods and the formation of snap judgments. Along with a favorable attitude and an ideal of careful thinking goes the satisfaction or pleasure which comes as a result of the exercise of desirable methods of thinking.

Again, it seems possible that the individual may grasp the essential characteristics of the methods of procedure which characterize good thinking or problem solving and may consciously adopt these methods. One illustration will suffice. The experimental analysis of problem solving has shown that it is better to vary the attack upon a problem when we find that the first line of attack which we use does not bring us toward the solution. On the other hand, it is found better to avoid the other extreme of too flighty attack and to follow up one line of attack long enough to find out whether or not it is likely to succeed. The two extremes to be avoided are undue persistence in an unfruitful line of attack, on the one hand, and undue variations from one line of attack to another, on the other hand.

It must, of course, be clearly recognized that these are only possible modes of generalization or transfer. They are only possible and not inevitable accompaniments of learning. The combined effect of all of them will probably not produce anything like complete transfer. But even if only a moderate degree of generalization is possible, it is distinctly worth aiming at. If this moderate amount of transfer is not possible, there is no use in talking about training in thinking. The reasonable conclusion is that training in thinking is not necessarily excluded by the facts of transfer of training but that it is somewhat limited. The effect of training is less in other fields of the child's experience than in those in which training occurred.

Is the child's intelligence fixed by inheritance?—Another form which the problem of the possibility of training in thinking takes

is represented by the heading of this section. We have already seen that intelligence tests measure to a large extent the ability to think. Many psychologists believe that the individual's score on an intelligence test is determined solely or mainly by his inherited capacity. If this is the case, his ability to think, which is a large constituent of intelligence, is also fixed by inheritance and, therefore, cannot be improved by training. One might, perhaps, try to avoid this conclusion by saying that, while it is not possible to develop the ability to think, it is possible to train the individual better to use the ability which he possesses. This reasoning, however, would be an evasion of the question at issue. Intelligence tests or any other tests that we may use measure the use of one's ability and not ability directly. If, therefore, it is not possible to improve the ability to pass tests of intelligence, it must be likewise impossible to improve the ability to think.

Recent research has overthrown, or at least cast doubt upon, the earlier dogmatic view that intelligence cannot be improved. Most of the earlier evidence was open to a double interpretation. When, for example, we find that the intelligence of children is greater the further they have advanced in school, it is possible to interpret this as meaning that the duller children drop out in the earlier grades and that the school has acted as a selecting or sorting agency. On the other hand, it is possible to interpret this same fact as meaning that the more education the child receives the greater is his intelligence by consequence. The same facts may be interpreted in harmony with the belief that intelligence is influenced by training or with the belief that one's intelligence is fixed by inheritance. Again, we may give a double interpretation to the fact that there is a resemblance between the intelligence of parents and the intelligence of their children. This may, on the one hand, be due to the fact that the children inherit some measure of the intelligence of their parents. On the other hand, since the more intelligent parents on the average provide the better homes, the resemblance may be due in whole or in part to this fact. The better homes may be responsible for the superiority of the children of the more intelligent parents, and the poorer homes may be responsible for the inferiority of the children of inferior parents. Children's intelligence may be a product of both factors.

It is only as we are able, by experimental or statistical investigation, to separate the factors of parental intelligence and of environment that we can distinguish between the operations of these two factors. This separation has been made with at least partial success in the study of foster children. Foster children are separated from their parents and are taken from their original environment and

placed in a different environment. This change of environment is found to raise the intelligence level of these children. The foster children, moreover, tend to resemble the homes in which they are placed. Two brothers who are placed in different foster homes become decidedly less alike than are brothers and sisters brought up in the same home. Furthermore, totally unrelated children brought up in the same home become about as much alike as are these brothers and sisters who are brought up in different homes. The general level of intelligence of foster children is practically the same as that of children in general, whereas their inheritance and early environment is distinctly unfavorable. In so far as intelligence may be regarded as the same thing as the ability to think, then, we may conclude from these studies that the ability to think is susceptible to training. Instead of the facts about intelligence constituting an obstacle to the belief in possibility of training thought, then, they actually favor that belief.

THE CONDITIONS OF TRAINING IN THINKING

Just as transfer of training may or may not take place according as we believe in its possibility, so thinking may or may not be improved according as we believe or do not believe that it is possible. The very disbelief in the possibility of training the child to think will prevent such training, because it will prevent us from taking those measures which are essential to training in thinking. This is a case in which disbelief seems to justify itself and in which faith justifies itself.

Another necessary condition is that we should regard training in thinking as a suitable aim of education. If, for example, we think that arithmetic should be taught only for the purpose of giving the pupils facility in the routine operations of addition, subtraction, multiplication, and division, it is just these operations that we will teach him. We should not expect him to learn to think unless we give him practice in thinking. We will not give him practice in thinking unless we regard this as a desirable objective. Similarly, if we believe that the objectives in teaching history are to make the child acquainted with certain specific historical facts or to develop in him certain predetermined attitudes, such as the chauvinistic attitude, we will bend all of our instruction to this end. On the other hand, if we think it desirable, at least in the secondary school, to teach the child to examine first-hand sources of information and to draw inferences from them, we may be able to develop some skill in the interpretation of the records of human behavior. The development of the ability to make such interpretation is training in thinking.

Again, character education gives opportunity for a diversity of aims and a diversity of methods. If our aim is to develop in the child routine habits, based upon imitation or upon mere precept and authority, our procedure will give little scope for training in thinking. If, on the other hand, we consider it an essential part of our aim to develop in the child an insight into human relationships and an ability, in some measure, to draw his own conclusions concerning desirable courses of action, we will set up a procedure which will give opportunity for the exercise of these mental operations. It must be obvious that our conception of the aim of instruction will determine in very large measure the procedure and outcome of instruction.

The foregoing conditions are general ones. In addition to these there are certain more special conditions which are necessary to set up if we are to train in thinking. Perhaps the first of these, and the one which we are likely to neglect in our impatience for results, is that we should give time to allow the child to think. This is a case in which the most effective method is to make haste slowly. Haste in the beginning results in increasing confusion and in the later slowing down in the child's progress. Deliberation in the beginning, on the other hand, gives a completeness of grasp which enables the child to progress more and more rapidly as he goes on. Thoroughness of grasp and the ability to use one's judgment from the beginning is an essential in this type of education. We cannot set the same time limit to such learning as we can to the more mechanical types of learning. Thinking is not quite so straight forward and clean-cut as it is made to appear in logic books and in mathematical demonstrations. There is always a certain element of chance in the solution of a problem. We must always fumble around more or less before we hit the right trail. If, instead of allowing the learner to find his own solution by this fumbling method, we give him a solution ready-made, we entirely alter the type of learning. Provided the pupil is at work at a problem, we must not be disturbed at an apparent waste of time. This is characteristic of all thinking, and there is no possible way of avoiding it. If, then, it is worth while to train the child to think at all, it is worth while to provide enough time in which to allow him to think.

Another special condition of thinking is that the student shall be provided with the data necessary to think with and that he shall come in contact with problems. Thinking does not take place in a vacuum. It takes place when one is confronted with situations which present problems. It is an old puzzle in education whether the possession of information is a help or a hindrance to thinking. We sometimes

think that information is a hindrance, because we know certain pedantic persons who know a great deal but who think very little. This only shows that it is possible for us to become preoccupied with the accumulation of facts while we neglect to use them. It does not prove, however, that we can think without facts.

Similarly, it is desirable that the pupil be brought into contact with problems as they have been discovered and attacked by other persons. He should be encouraged to discover problems for himself, but he is not likely to make much headway in this discovery unless he is started on the road by the example of other persons. Teachers are sometimes inclined to think that it is sufficient to put the child into contact with the raw materials of problem solving. This policy, if carried out consistently, assumes that the child could discover all of the science which mankind has developed by his own unaided efforts. We must encourage in the child all the intellectual initiative of which he is capable, but we must realize that this initiative is the product of an acquaintance with the scientific labors of his predecessors.

While an acquaintance with the methods and the findings of a science provides the student a background for his own questionings and investigations, it is only the exceptional student who is stimulated by such knowledge to independent inquiry of his own. Most thinking is stimulated by the social situation. The social situation in the school which provides the necessary stimulus consists of two elements. One is the influence of the teacher and the other the influence of the other pupils comprising the class. The teacher serves as a guide in planning or suggesting problems and in giving the pupil just enough help to keep him going. The discussion of a problem in a class group serves to stimulate each individual and to provide a larger number of suggestions than would be thought of by any individual in the group. Individual and group criticisms, then, are very important conditions for thinking. They stimulate the individual to think, and they furnish correctives to keep him from the errors which he would be likely to fall into if he worked alone.

The essential conditions seem to be first, then, that we recognize the possibility of training the child to think and that we accept training in thinking as a suitable aim of education. After we have recognized the possibility and suitability of this aim, we must provide the necessary specific conditions. These conditions may be summed up as consisting, first, of sufficient time to allow the child to think; second, an acquaintance with the methods and conclusions of scientific investigators; and third, of a favorable social situation to give the child guidance, stimulation, and criticism.

As has already been said, anything like an exact or comprehensive evaluation of the work of the schools in training the child to think would demand a comprehensive investigation. Such an investigation has not been made. All that I can do is to give the impressions of one observer and to inquire whether these impressions seem to indicate needed changes in our prevailing practice.

DO THE SCHOOLS PROVIDE THESE CONDITIONS?

It is pretty safe to say that the schools generally do something in training the child to think but that they do not do as much as we might reasonably expect them to do. We might find examples of training in thinking which approach closely to the ideal in this form of education. Examples of satisfactory training in thinking are perhaps more often met with in the social sciences than in other subjects of instruction. In the natural sciences and in mathematics the solutions of the problems which are likely to be treated in the elementary school have been so thoroughly worked out that the easiest course seems to be to give the pupil the answer to the problems instead of letting him find his way to the answer himself. If our aim is to teach pupils a collection of finished conclusions or beliefs, this, of course, is much the more economical method. If our aim is to teach him to think for himself, however, the time we spend in this kind of teaching is largely lost. Since I believe that training in thinking is an important objective of education, even in the elementary school, I believe that it pays to lose time in arriving at conclusions in order that the child may gain the power to think.

We may take an example from the teaching of arithmetic. A very common theory and practice, probably the prevailing one, is to treat arithmetic as a set of mechanical operations. At least this holds for the teaching of the mathematical processes themselves as distinguished from the so-called reasoning problems. It is considered uneconomical to attempt to rationalize the methods of procedure which are followed in calculation. It may be possible for the child to understand the procedure, but it is neither necessary nor useful.

There is a serious question in my mind concerning this theory and practice. That it is possible for an elementary class to think through and thus understand the various procedures which are followed in calculation is shown by the report of an experiment with a third-grade class made by Dr. Mary L. Dougherty.[2] The experiment dealt with the processes of carrying both in addition and in

[2] Dougherty, Mary L. "An Experiment in Teaching Arithmetic in the Third Grade," *Elementary School Journal*, 22:665-76, June, 1922.

multiplication, of borrowing in subtraction, and of the similar process in division. In all of these processes the children were carried by easy stages from step to step so that they largely discovered the procedure themselves or at least grasped it as it was explained. In any case the actual suggestions of the succeeding steps were provided by the children themselves.

A concrete illustration may be taken from one of the simpler processes, namely, that of carrying in addition. After the class had had practice in adding single columns, it was given an example consisting of four two-place numbers. The pupils first found the sum of the first column. When this had been obtained the teacher asked, "How shall we write this number?" The pupils finally answered this question. The units column was then copied to one side. One of the pupils then placed the answer correctly under this units column. The teacher asked, "Why cannot you write the answer so in the example?" A pupil replied, "Because there is another column there." The dialogue then continued as follows:

Teacher.—Is there anything we can do?
Child.—We can add it in with the others.
Teacher.—Why do that?
Child.—Because it belongs in that column.
Teacher.—How shall we know we are to add it there?
Child.—We can write it above the line.

This procedure was then followed to the satisfaction of the class. The children then adopted the habit of writing the number to be carried above the line and the number in the units column below the line. The children followed this procedure from that time forward without confusion or difficulty. In a similar way, the other three procedures were developed.

It is pretty clear that the procedure which has been described is not characteristic of our prevailing practice. We have either believed that it was not possible to teach children to think or we have believed that it was not worth while. Both conclusions, I believe, are wrong. It is possible to teach children to think much more than we have commonly believed possible, and it is worth while to develop all the thinking power we can with a reasonable expenditure of time and effort.

If we are to change our practice and to place greater emphasis upon training in thinking, we must, of course, adopt a different attitude and place a higher value upon training in thinking as an educational objective. This means that we shall make some change in the prevailing method of constructing the curriculum. We shall

not base the curriculum entirely upon specific and minute bits of information and skill which we find to be characteristic of the life of adults. We shall recognize that there are general objectives which are as important, if not more important, than these specific ones. We shall realize that the general mental growth of the individual is a real and an important outcome of education. This, I believe, will be a desirable modification in our current point of view.

If we are to make room for training in thinking in our educational program, we must realize that it is somewhat more difficult to schedule in a minute and detailed fashion than is the development of special skill or the acquirement of specific items of information. It is true that the stage may be set and provisions made systematically to encourage the children to think, as is illustrated by the example in arithmetic. Because thinking cannot be planned as definitely as can more mechanical types of education, we are not warranted in leaving it to chance. The conditions which favor thinking need to be carefully prepared, and the child needs the teacher's guidance.

We touch here upon the final difficulty which I shall mention. This difficulty is the lack of preparation on the part of the teacher. The ability to direct the child's thinking requires a higher and more thorough type of training than does the ability to conduct mechanical types of drill. It is probably safe to say that a large number of teachers are not adequately prepared to conduct this type of training. I shall not attempt to diagnose the cause of this deficiency in training further nor to fix responsibility for it. I am simply pointing out that if we are to make training in thinking a larger objective than it now is, one of the difficulties which we shall have to overcome is a more adequate preparation of teachers to carry on this type of training.

The conclusion which I would urge upon your consideration is fairly obvious from the preceding discussion. Training in thinking is, I believe, a perfectly feasible and highly desirable aspect of education. The objections which have been raised to this aim on the ground of educational psychology are not warranted by a critical examination of the evidence. Its desirability is so great as to warrant us in setting it up as a major objective. The school is now accomplishing something toward the attainment of this objective. It is, however, falling short of its opportunity in this matter. This failure to realize our full opportunity is due partly to the fact that we do not recognize the importance of training in thinking and partly to the fact that it is a difficult type of instruction. Much more could be accomplished than we are now accomplishing without any radical change in general organization and without any change in our present teaching staff

merely by a fuller recognition of the desirability of training in thinking. The considerations which I have presented in this paper warrant, I believe, such fuller recognition.

An Evaluation of Arithmetic in the Elementary School

R. L. Morton[1]

It is not difficult to show that both the scientific study of educational problems and educational theory have made large strides in the present century. Consequently, the best of our present educational practices differ from those of three decades ago almost if not quite as much as the best present means of transportation and communication differ from those prevalent at the beginning of the twentieth century. Unfortunately, however, we do not need to go into the past to trace the development of present practices. The various stages are with us today. Whether one be primarily concerned with the course of study or with methods of teaching, it is possible to find in the schools of Ohio in 1929 the 1900 level, the 1910 level, the 1920 level, and the 1929 level of what constitutes or has constituted the most enlightened and the most effective educational procedure.

It is my purpose to suggest to you through the use of a few selected examples that progress in the past thirty years has been great, and that communities vary tremendously in the extent to which they have shared in this progress. This will constitute what I choose to offer as a partial evaluation of education in arithmetic in the elementary school. My statement must of necessity be fragmentary. It will be neither a scientific analysis nor a philosophical evaluation of present practices. It is offered with the hope that it will stimulate you to scrutinize your own efforts to teach children what is perhaps the most difficult subject in the elementary school. Varied levels of progress in arithmetic teaching in our schools today may be illustrated by the following: (1) the multiplication "tables," (2) long and short division, (3) common and uncommon fractions, and (4) real and unreal problems.

Formerly, everyone taught the multiplication combinations by having the tables memorized in serial order. This was once done for the other three operations also, but the practice seems to have been discontinued in teaching the fundamentals of addition, subtraction, and division. Furthermore, the tables were formerly memorized in nearly all schools to 12×12. A better practice seems to

[1] Ohio University.

be the modern one of teaching the combinations to 9×9 and of greatly reducing the emphasis upon the serial order found in tables. The latter plan means that the combinations are taught as they are used, that full advantage is taken of the similarity of the two facts for a given combination, as 8×4 and 4×8, and that this permits us to present the combinations in the approximate order of their difficulty.

The general practice of teaching short division before long division should be questioned. Using the long-division form at first for one-digit divisors means that the steps in the complicated process of division are written down where they can be seen. Beginners in dividing 635 by 8 find it very difficult to subtract an invisible 72 from a partially visible 75. At its best, division is hard. Good teaching will not make it easy but good teaching will make it easier. Short division may be introduced later as a short method. This permits us to postpone the teaching of the higher-decade subtraction combinations which are needed in short division.

Many of the common fractions included in the examples which are given to children for practice are quite uncommon. The tendency, at present, and the practice in some schools, is to limit drill on the operations with fractions to those fractions which are of reasonably frequent occurrence and to teach children to dispose of fractions having unusual denominators, when they occur, by converting them to decimals.

Among the criteria of a good problem is reality. Ideally, a problem should not only be real but should be a vital force in the lives of the pupils solving it. Since no two groups of children have identical interests, it is impossible for textbook problems to measure up to this high standard of reality. Textbook problems can, however, avoid some of the absurdly unreal characteristics which they too often possess. A problem whose answer had to be known before it could be formulated is by its very nature unreal. Out of school, we solve problems to find answers to really pertinent questions. We do not solve such artificial concoctions as are often made by one who started with the answers, unless we solve them for recreational purposes.

Problems are occasionally found in our schools which are unreal because they do not correctly reflect social and business practices. Pupils are required to write promissory notes without the printed forms, to find the cost of shares of stock with an unheard of brokerage rate, to find how far a super-horse can trot in ten hours, to consider the automobilist who drives his car just 114 miles per day on a

trip, to sympathize with Ralph who knows that he has just one-quarter of a ton of coal left for the furnace whereas last week he had five-eights of a ton. There is evidence that these extremely unreal problems are passing although they are with us in Ohio today. Many teachers, furthermore, hold that the experience of solving problems such as these is extremely good for the pupils in some way.

It has been our purpose, as was stated at the outset, to suggest that arithmetic has made great progress in recent years but that every level of advancement of the last thirty years, from that of thirty years ago to that of today, can be found at the present time in our public schools. The evaluation which we place upon education in arithmetic in the elementary school, then, depends upon the school. And the school, to a tremendous degree, depends upon the teacher.

An Evaluation of Reading in Elementary Schools

LAURA ZIRBES[1]

THIS evaluation is not based on a study of the outcomes of instruction in reading as represented in the results of a testing program. It is based on a field survey of instruction itself. During three months of field work in the present school year it was possible to gather first-hand data on the teaching of reading in representative school systems of the state and to institute comparisons with data gathered in a more extensive comparative study of current practices in reading.[2]

Practice is changing. There are evidences to show that the recommendations of progressive leaders suggesting desirable changes in the reading program of elementary schools are influencing the choice of materials, the division of time between oral and silent reading, the amount of reading material provided in each school year, and the standards of judging reading ability and achievement. These changes in practice are in line with desirable trends, but there is still a considerable lag between practice and investigational findings, and there is little evidence of a conscious purposeful reconstruction proposed by progressive leaders in Part I of the *Twenty-Fourth Yearbook of the National Society for the Study of Education* for 1925. The traditional oral-reading recitation persists, notwithstanding the wealth of suggestions for substitute procedures.

[1] Ohio State University and the State Department of Education.

[2] Zirbes, Laura. *Comparative Studies of Current Practices in Reading.* New York: Teachers College, Columbia University, 1928. 229 pp. (Teachers College, Columbia University, Contributions to Education, No. 316)

The greatest hopes for further improvement depend on a continuous evaluation of classroom procedures by teachers. The critical questions which are used by investigators in surveying the field are questions which teachers may and should ask in self-surveys and the answers should in turn direct efforts toward reconstructed or improved practice in the teaching of reading.

What are these questions? First, and perhaps of most significance, is this question, Is the reading purposeful? Investigations tell us that the reader's purpose controls and directs his attention, and has much to do with the mental processes involved in reading. The reader who has no purpose must be controlled or directed in a formal, didactic manner. This is so unlike the typical situation of life in which reading occurs that it considerably reduces the educative value of the experience. Purposes are implicit in reading materials and situations. The progressive teacher guides children's reading by facilitating the discovery and realization of worth-while reading purposes.

The second is, Is instruction in reading related to the interests, abilities, and needs of the individuals who make up the class? The modern program in reading is concerned with the development of abiding attitudes toward reading as well as effective reading habits, and this means an adjustment of instruction to individual differences, based upon continuous study of pupils' needs and interests. Mass teaching which covers the ground by taking up consecutive selections in routine fashion does none of these things. Such procedures are responsible for negative attitudes toward reading and for a goodly proportion of the remedial cases in the intermediate grades. Progressive procedures are diagnostic since they reveal pupils' needs so that preventive and remedial practice may find its mark and be timely and appropriate. Informal tests of comprehension and checks on the maturity of reading habits are essential means for the improvement of instruction of reading, indispensable to progressive teachers.

Third, we must ask, Is the reading diet or program of a given group or class varied and rich enough to include an acceptable range and supply of suitable materials truly representative of the possibilities of reading in modern life? This is a question which involves an adequate supply of reading materials wisely selected to supplement the materials of intensive instruction in reading. It means access to and use of library facilities in the school and in the community. It means a broad program of significant reading experiences each of which makes its contribution to developing tastes and abiding interests in reading.

The fourth problem is, Are there indications that the children are reading and enjoying reading in their free time in school and at home? Reading must be a life activity, a habit in a broad sense.

These are the questions which the teacher should apply to the reading activities of her own classroom. Principals, supervisors, and superintendents who are concerned with the improvement of reading may also ask these questions to evaluate reading instruction. They should be concerned with the development of a broad and balanced reading program avoiding the errors of undue over-emphasis on any one aspect of reading which so often characterizes attempts at reconstruction. Proper balance does not mean equal emphasis on contrasted aspects of the reading program but rather appropriate emphasis in terms of relative values at various levels of reading growth. For example, mechanics and meaning are properly balanced when mechanics are from the beginning consistently subordinated to meaning. Impatience for power in word recognition, which leads to an over-emphasis of mechanics at the outset, is responsible for subsequent problems of word-calling, insufficient attention to meaning, and loss of interest in reading.

Other contrasted aspects of reading programs which must be properly balanced may merely be listed: (1) cursory and assimilative reading; (2) extensive and intensive reading; (3) socialized and individual reading; (4) sight reading and prepared reading; (5) directed and independent reading; (6) recreation and work-type reading; (7) specific training and less specific practice; (8) oral and silent reading; (9) reading of current matter and reading of literary classics; and (10) reading from readers and reading from other books, magazines, and materials typical of out-of-school life. These are all comprehended in a progressive program in natural combinations to serve the social uses and needs for reading in life. An evaluation of reading must in the last analysis show to what extent the school is contributing to values characteristic of reading at its best.

Health Education in the Elementary Schools

PHILIP L. RILEY[1]

IN order to be fair to those in health education, it is necessary to state, first, that before we can make any evaluation of an educational process, there must be an appreciation of the need for and the services rendered by that process on the part of school administrators. Further

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than that, administrators must recognize that health is fundamentally an educational problem and make sincere efforts to meet it. Many individual teachers, and in some places, entire schools have studied their health problems and have attempted to face them squarely.

There are six more or less direct methods by means of which we may test the efficacy of health work: (1) improvement of physical condition, (2) improvement in rate of growth, (3) improvement in health knowledge, (4) improvement in health habits, (5) reduction of absence rates and incidence of communicable disease, and (6) relation between scholastic achievement and physical condition.

Whereas, the function of correcting physical defects is primarily that of the medical services in the school, the real teacher can assist the doctor and nurse in securing corrections because of her much more frequent contact with the children. It is wise, however, to confine her attention to the correction of such defects as those of teeth, nutrition, and posture, and leave the more serious defects of tonsils, heart, and lungs, to the attention of persons having greater medical knowledge. However, it is distinctly unfair to try to measure the effect of health-education procedure simply by this method, because there is involved here the tremendously important factor of the financial condition of the family.

A second useful measure is that of rate of improvement in normal growth. If a teacher will carefully weigh her class from month to month and observe the fluctuations of growth as they occur, she will find reflected there not only the effect of her own teaching and possibly her personality but also many interesting facts with regard to the lives of her children. We are interested in the monthly weighing of children not with respect to their normal weight, which is after all a theoretical condition, but with respect to regular increase in growth. This regular monthly growth is based upon the observation that all healthy young animals that are free to grow do so. Upon this basis, a teacher may expect that all the pupils in her room will grow a little from month to month. If over a period of three months, there are some who do not do so, then she may be assured that there is something abnormal in the lives of those children. If she is a conscientious teacher, interested in her children's health, it becomes her duty to investigate those causes to see whether or not it lies within her power to remove them.

It is not difficult to prepare health-knowledge tests in the same way that we prepare knowledge tests in other subjects, and the results of such tests have all of the merits and fallacies of any knowledge test. However, when we come to measure improvement in

habits of children, we are arriving at a more difficult part of our problem, because what is a habit today may be an entirely different reaction a week or a month later.

The communicable diseases of childhood are almost without exception hand-to-mouth affairs, that is, the mode of transmission of a disease from one child to another is by means of the nasal excretions and saliva carried from the mouth and nose of one child to another, chiefly by the hands and, possibly, by those things which have been in the mouth and hands of the child. If, beginning in kindergarten, a rigid routine of habits of cleanliness is built up, there will undoubtedly be a diminution of contagious disease and absence.

There is another method of measuring achievement in health education which demonstrates better than any other the value of this service to the school. It is one, however, which involves considerable time and expense on the part of the principal, but if there is a sincere desire to do really good health work, then it is certainly worth while to make a real measurement of its achievements. If it is possible, make a comparison of this type: obtain the intelligence quotient or probable learning rate of each child, compare this with the achievement record of that child from year to year, and at the same time compare both of these with his physical condition, his health habits, and health knowledge. We find that if we make such an analysis, that the intelligence quotient and achievement may not agree. If we take all such cases and check the health conditions of these pupils, we will find that in many instances physical handicaps of one type or another are interfering with the child's achievement. If we will take the time to remove those handicaps and follow that child's achievement through a period of years, we will find that an improvement in health conditions is invariably followed by an improvement in scholastic achievement. In other words, this means that if we make the child's environment the best possible from the standpoint of his own physical condition and habits of living, we are giving him the opportunity to make the maximum possible achievement of which he is capable. This does not mean that by improving the health of the dull child and poor scholar we are going to put them at the head of the class, but it does mean, and this is of greater significance, that each child will have the opportunity to achieve his maximum opportunity which has been denied him in the past because of our failure to realize that he is a distinct personality who reacts to favorable surroundings instead of merely a receptable into which knowledge is poured.

The India of Kipling and of Gandhi

Dhan Gopal Mukerji[1]

Why is it that in the Orient, no people, whether they are Hindus, Mohammedans, or Christians, have a sense of time as you have it here? Some years ago, thirty years ago perhaps, when I was ten years old, I was in the habit of sitting with a Holy Man under a tree, and every day at four o'clock we used to see an Englishman running in a great hurry somewhere. And I asked my Holy Man, "My Lord, why do western people run?" And he said, "It is because they think that the road has an end, and they must be at the head of the rest of the world there. That is their trouble. We think the road has no end. So we sit under a tree and meditate. And that is our trouble."

That gives you in a general way our conception of time. Is time real? Now the Oriental says that if there is any reality to time, it is so negligible as that there must be no time. The modern Oriental mind or the modern Occidental mind that has been created in the last hundred years perhaps has a somewhat different conception of time.

You will remember what my Holy Man said about the reality of time. Let us concentrate on the reality of time. Is it true or not? The conception in the Western World today is that every minute is real. Now, that is the modern West. You take the modern East, which is not quite modernized yet, there is still the sense that all reality is timeless. Take the books of Kipling. You have the same notion operating there. First of all in the book *Kim*, as you recall, the lama is perfectly the symbol of the East, the perennial East, the East that does not change very much. Kim, who is the symbol of the modern West, wants to get things done. These two characters go through the entire book.

Of course, you see some very charming places on the way. You go to Lahore, where there are marvelous works of art. You remember the museum where Kipling's father was the curator. The tenderest pages in that book are the paragraphs where the curator describes on the map the route the lama is to take. Then you go to the Himalayas. If I recall, Kipling says something about the eternal snows.

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That is not good phrasing. Eternal snows! It is just like saying that the Grand Canyon is charming. It does not make a dent on the Canyon at all, and the word "charming" is wasted, but those are phrases which all the writers use. When I read the description of the Himalayas in *Kim* I said to myself, "How could he do it?" Then it occurred to me that he was writing when Queen Victoria was alive. Then eternal snow meant something to people, but it does not mean anything to the modern flapper. Hence, you have a modern phrasing, that is, "The Himalayas." There we stop. The noun is everything.

Now to come to our essential interest in *Kim*. In this book, all the way up and down, you have the lama's sense of time. He says frankly, "I cannot travel by train. It bores me." And he gets out and walks. A most sensible way of seeing India. On the contrary, Kim, a representative of the modern world, wants to get something done. He jumps on the train as often as he can.

There you have the two concepts. Who will say, "This one is right, and the other is wrong?" The thinking man will says, "No, they are both right." In the entire book Kipling holds the balance between the two views. Both are right. But can they come to an understanding of each other? That to my mind is the problem of the book.

I should like to tell you one or two other interesting things about Kim's road. On that road I have seen over eighty tame elephants, with cloths of gold and silver bells. Silver chains hold the bells hanging over the elephants' backs, and every time the beasts moved the bells rang. I have seen them on that road in the twilight, their gold trappings disappearing into the emerald haze of the evening, and the dust on the road rising like saffron incense. Today you go on that road, and it is changed. The other day I was amazed how many times I jumped off so that one of your Ford trucks could go by! There is the gift of Detroit to India.

You know how hurried the cars are. And that which is in a hurry is not decent. Occasionally you see a mangy camel go by. Camels are not interesting. Anything with two or one humps is not interesting. If you want old India, stay home and re-read *Kim*. The India of old is dying fast. I have seen it in my time, but the speed of mechanics is undoing all. First went the horse. Next to go was the elephant. Now we have railroads. Nay, worse than that: aeroplanes are carrying mail through India.

In India today there are telephones. If you want to speak to a man, you can generally get him over the telephone. One day an

energetic fellow came along and wanted to put a telephone in my own Temple. I happened to have an ownership there. I said, "No telephone." He said, "This will civilize your Temple." I said, "Yes, but in this Temple for four hundred years everybody has been silent. It is saturated with silence." This man said I was behind the times. I said, "I have lived in America where life is a torture between the radio and the telephone."

About the radio I feel that God in His infinite mercy hid all that noise in the air, and you have dragged it out of the air and put it into every American home. In India the menace of this will be terrific. The other day a friend of mine was in Calcutta. He got a radio set from England. He calls his a topping set. One night this Hindu got Pittsburgh, and he said, "My dear chap, you must hear Pittsburgh."

Now this is modern civilization coming into India, and you do not find it in Kipling, because he wrote in 1904. And then India was not civilized as it is today. Today's industrialism came to India since the war. The Indian people have become the eighth industrial nation on earth. If you do not believe it, go to the Labor Office in Geneva and look at the statistics, and you will find that it is true. Before the war she was some sixteenth or eighteenth, industrially speaking, and now she is the eighth. In the next twenty-five years she may be the fourth. We are going to be able to undersell all of the Americans and all of the British and all of the Germans in the world, which prospect is very forbidding. But it may happen. Into India's old culture has come the industrial savage in the name of civilization and made an impact. The two concepts of time are at war in there today. This is the thing I want you think about, but before we go into the heart of the matter, let us go about a little, like an elephant.

In my country at present you have a figure arising who wants to say that machinery is not sound, who, in fact, says that most machinery should be abolished. And he has got the approval of the country, of peasantry, which is eighty percent of the people. Let us analyze this man's mind. Mahatmi Gandhi is rather an exalted character in the newspapers. You noticed a fortnight ago they arrested him in India. They brought him to trial and gave him a sentence, a fine of thirty-six cents. Gandhi is exalted as an idealist. He is not, however, too exalted. I do not know any man more practical than Gandhi. No American is so practical. He is a person who had worked with his hands. The painful part of it was that Mrs. Gandhi, whom you know nothing about, has had to share his lot. She has had to live with

this saint. And if you want to know who are the martyrs of mankind, I would say the wives of the saints. So you have the spectacle of him marrying a rich man's daughter, who had never done much work with her hands, suddenly forced to grow flowers and fruits in Africa for a living.

When the war came Gandhi went to France. He did not live up to his philosophy at that time. He went to work recruiting Indians. After the war he changed, but that is another story. As Gandhi changed, he realized you can never help anybody, not only friends, but enemies also, by abandoning your own philosophy of life.

Then the Indian Nationalist Movement began. That movement is not understood yet. It looks something like a trick; it appears romantic. And again, if I may say so, it is a realistic movement. It is not a romantic movement. It is based on this question: "How long can we go on being a conquered race? Can we end our servitude now?" What is the situation of a conquered race? It becomes a race of very mean haters all the way through. There is a great deal of hate in India. No one knows this, because no one has the courage to admit it.

After the war, Gandhi came back and saw our whole country diseased with hate. Let us imagine then that he said, "How am I going to heal this nation?" Then the Amritsar Massacre created a tremendous excitement. Into that breach stepped Gandhi. "Without violence, in many years. With violence, not in five minutes. This nation must conquer itself." In places where people broke out in violence he said, "No, we must withdraw our entire program and retreat." When he withdrew, the Government sentenced him to five years in prison. This was in 1922.

It was an amazing sight when he came into the courtroom. A British Court of Justice is very pompous. If you saw a court at work in India, you would say, "It is a pleasure to be sentenced to death in this court." About Gandhi's trial let us listen to an observer who has said, "There are three great trials in history, the trial of Socrates, the trial of Jesus Christ, and the trial of Gandhi."

To go on with this Gandhi philosophy, I want to tell you one story. In 1923, about two years after his imprisonment and after his release from jail, he went to the south. In southern India we have an institution we call the Pariahs. These Pariahs are a race our ancestors conquered. Then we ourselves were enslaved, but we have not redeemed the Pariahs. When Gandhi went south they made their grievances known to him. He was very ill. All the same he decided to help the Pariahs of Waikom, a city of seventy thousand.

In Waikom city you can traverse the main street in an hour if you go straight through. But this is reserved for the high caste Hindus and the Brahmans. If the Pariahs went, they had to go away from the road on the sand of the open sea, a journey that was two hours longer. That was impossible. Gandhi heard this. He said to the Pariahs, "I want you to watch this. Can you purify yourselves of hate and fear, of gambling and drinking?" They responded, "What has that to do with it?" He said, "It is not the Brahmans that have kept you down. Can you meditate and purify yourselves?"

The other day I was talking to an Englishman. He said, "My dear fellow, what the dickens do you meditate about?" That is a moot question in a race that does not meditate much. It depends on what you want to solve. In the case of these people it was hate and fear of Brahmans. The Brahmans had oppressed them for two thousand years. In any event, the Pariahs of Waikom prayed and meditated as they were told. Every evening before they went to bed, a whole family would sit up and meditate eternal courage and eternal life. They also stopped gambling and drinking.

In six months' time Gandhi had left. He had gone north. They said, "We are ready. We have purified ourselves." Then they went out and enrolled people. Now about twenty pure Pariahs marched to the old road. The Brahmans sent for the police. The group of Pariahs singing Psalms, marched forward. Of course, the military police came down on them with their sticks and cracked their heads, but the people did not run away. They fell down and lay on the forbidden road till their friends had them removed to hospitals. The next day twenty new Pariahs came, singing the praise of God. The same thing again happened. Then the government found there was no use hitting these fellows, because they would not run away. Hence, every day for sixteen months twenty Pariahs were put in jail. After sixteen months the Brahmans said, "We cannot do this; this is a spiritual thing." Now the Pariahs go on that road. Sheer non-violent resistance won out. That gives you an idea of Gandhi's technique. Before taking any action we should purify ourselves.

Permit me to tell you another story. This happened in 1928. The industrialized laborers, who are very numerous in Bombay, Madras, Calcutta, and other towns, have become radical. They really believe that the workers of the world should grab all of the industries and run them. It is a very charming philosophy, but it will not work. That is the only weakness it has, a very slight weakness, but there it is. Gandhi is against it. He wants the people to obtain all they can, but he says, "Your weapon is all wrong. It is not

the way to do it." Industrial laborers all over the world are tainted with the same restlessness. The peasants are on Gandhi's side. The farmer knows that time does not matter. He knows that a seed can be sown but that it cannot be made to hurry. In May the industrial laborers started general strikes in railroads and factories, and in some places they broke out into violence. They were shot and bullied. Besides, some of the laborers were put in jail. And soon they had to go back to work *en masse* beaten and done for.

Now compare it with Bardeli where the peasants had been given an extra tax to pay. They came to the old man and said, "Shall we pay this tax?" The old man said, "Is it just?" They said, "No." The old man said: "Why should you pay it? I have been banking on you to prove that non-violence will win." They said, "All right, we will do it." They waited a month. I am told that the people prayed and fasted.

What a good thing it would be in this country if people prayed and fasted for their souls and not for their figures. It is amazing to me that you have the same things but call them into use for an end that is not justifiable, as if the question ever became physical.

Now going away from this allusion again to India. In June the government came to levy the tax. Nobody would pay it. The state auctioned their houses, then auctioned their wheat, then auctioned their cattle. Thus, the taxes were realized. And property worth thousands of dollars was auctioned. After the auction, eighty thousand men, women, and children had to be expatriated—exorcised out of their houses—what is the phrase in English?—evicted. Now you could not do that. Eighty thousand people cannot be evicted, so the government could not do anything. Children went to school all the same, and other people did little work. June passed. July passed. Then the people said, "We are going to cut the harvest." The government said, "It is not your land. It has been auctioned off." They said, "We do not admit it." No government has a sense of humor. Armoured cars and soldiers were sent to protect the new ownership.

Now the peasants announced: "The women and children will reap the harvest and the men must stand in front of the guns." So the men went and stood in front of the guns on the first of August. The guns did not go off. The next day the guns did not go off. The third or the fourth day the guns were withdrawn with the soldiers. Then the government said, "We will adjudicate this tax and see if it is fair." The inquiry is now going on, and the people have not paid any tax since June. They reaped their harvest and are very happy. Gandhi and his followers say: "You can see what is done by resist-

ance that is not based on violence. But if you had lost your temper like those laborers, you would have lost everything."

Here I come to the central thesis of my talk. What is all this about? These facts tell their own story, but there is a central philosophy involved. Gandhi has been called a Christlike man, and I have heard a clergyman say, "It is the Second Coming of Christ." You see Baptists and Methodists are carried away by emotions, and I, not being a Baptist or a Methodist, am not convinced by this tremendous praise of a poor heathen saint. He is not a Christian and can never be. I want to point out to you why Gandhi is not a Christian. This is the most important thing for you to bear in mind, because you people in the West have an idea that any man of that type is a Christian. But that is not so. To be a Christian is a different thing. Gandhi does not believe in non-resistance, which is a Christian teaching. Non-resistance is a thing believed in by Anglo-Saxons, who are impractical, and whenever there is a scrap, they send for the British Navy. It is not a practical thing to believe it. That is why you have to have the practical thing—the navy. But if you believed in a practical thing, like the non-violent resistance, you would not have any.

What is the difference? The difference you will see in the lama in the Kipling book. You remember when he is hit by the Russian at the end of the book, Kipling sends Kim flying at his throat to kill him. And Kipling said, "Non-resistance is very good. Thank God for the British fleet." That is where his book breaks down. He was talking about something he did not know. The lama is not realized.

The Hindus are not talking non-resistance. At least Gandhi is not. He is talking about non-violent resistance, and here is the entire difficulty of translating Hindu words into English. See, you have no word for non-hate. We have three words, love, hate, and non-hate—sympathy, antipathy, apathy, not in the sense you have it, but in the sense of the Greek—serenity, not serenity of a stone, but of a Socrates, full of sympathy but at the same time not noticing his own pain. Now you remember the death of Socrates and the death of Jesus Christ. In the death of Jesus Christ the thing that is emphasized all the way through is the sense of pain. It is the pain of man-God which redeems God-man, and the God-man redeems mankind. The pain is labor, I mean, putting on the crown of thorns, putting the lance to his side. All this is the terrific cosmic pain which redeems mankind. This is Christian.

We had the same thing in India by another man. That was Buddha. He taught the philosophy of pain, but we have driven it out

of India. It is in China. It has no place in his home land. Now, you take the death of Socrates. Do you remember this? I read it the other day again. The old man was given the hemlock. There was no emotion of pain. Slight pain is mentioned, and then he died. That is pagan. That is not Christian.

Similarly with Gandhi. It is not a question of pain redeeming mankind. My pain is not redeeming you or my pain is not making me understand you. The question is non-hate, apathy. You must love your fellowman. All of your tragedies should be conquered by your apathy, not by your love. "I am the secret of secrets. I am neither sound nor silence. I am in the middle. I hold the balance between the two." When you translate things they go wrong. For instance, hatred is not opposed by hatred, it is opposed by non-hate, apathy. Now, it is not a philosophy of resistance or non-resistance. It is non-violence. The thing you disapprove of in the other fellow is not fighting, but violence. Resistance is the thing you want to do, but it must be non-violent resistance. Not violence means no non-resistance. Gandhi with all of his sympathy, with all his love, is at bottom a heathen. Silence can be overcome by apathy. It is apathy in the Greek and Hindu sense.

I have carried you far, perhaps far afield. I have not told you much perhaps. But in Kipling you come across the reality of India, a reality which, if not anti-Christian, is at least non-Christian. It is planted on its own roots, with its own conscience, and nothing will swerve it by putting obstacles in its path. What have you to learn from it? What have we to learn from you? Our rebellion against the machine, our rebellion against the western time process is sound, because, while the western reality of time may work for ten minutes, it will not serve for eternity. On the contrary, the west has made us realize that there are many things that can be done on the physical plane by the western sense of time. You can abolish malaria by drainage. You can make men healthy by the manipulation of the scientific sense of time.

Our Oriental says that things must happen in eternity, because man derives his conception and his experience of all truth from his inner experience and from his meditation. Over there in India the two things have come to grips. If we could engraft science on mysticism, then we should create a happy, wholesome civilization which will surpass any civilization men have ever had. And similarly, if you could add to your concept of time this Eastern concept of time which you held in the Middle Ages, if you could synthesize them here, you would create a civilization, the glory of which has not been

seen on sea or land. Some nations may achieve it. India hopes that she will achieve the synthesis.

Liberating Capacity in Composition

Howard Francis Seely[1]

For purposes of logical organization and clarity of understanding my paper may be roughly divided into two parts. In the first are briefly set forth certain general principles. In the second part specific application of these principles is made. The general principles may be handled briefly so that we may devote the most of our time to the more important phase, the application.

My thesis is based upon a group of assumptions. The first is that our pupils, boys and girls of all types and ages, possess what may be called capacity. The second is that this capacity may and should be liberated. The third indicates that composition is one of the means that may be employed for this liberation of capacity. The fourth assumption, while it is not explicit in my title, is nevertheless the most important of all and basic to the other three. In brief, it is that the chief aim of education is to make intelligence effective. Intelligence may be said to be effective when the individual as an individual and as a member of the group employs experience, either immediate or vicarious, in the thoughtful solution of the problems of life, whether those problems relate to him personally or more remotely. Thus, then, it may be said that education which aims to make intelligence effective may accomplish its end by liberating capacity.

Let us further clarify the problem by the determination of workable meanings for the terms liberating, capacity, and composition. Obviously, we should start with capacity. By capacity is meant the pupil's native equipment as a human being, which, as a result of his having lived a certain number of years, has become modified, developed, and given direction. This modification and development have come about as a result of experience. Experience is chiefly of two sorts. One is chance experience resultant from the largely undirected relationship of the child to his environment. It should be emphasized, in passing, that this experience is always exceedingly rich and full. Its variations with different individuals in different environments are variations much more of kind than of absolute degree. The second type of experience is largely directed, more formal. It begins, of course, in the family and continues there

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indefinitely, with varying inclusiveness, as to kind and time elements. What I mean may be illustrated by a comparison of the early directed experience of a Huck Finn and a Little Lord Fauntleroy. Very soon the school steps in as the director of experience, and attempts, with unlike degrees of success, to assume the rôles not only of director of experience but the maker and absolute dictator of it as well. Whether this is a legitimate effort is interestingly debatable on general grounds; that it is natural, however, is clear when we realize the school's institutional religious inheritance. Our point just now, however, is that each pupil possesses capacity of an individual sort, founded upon general native equipment, which has been modified, developed, and differentiated by particular but uninterrupted experience. Capacity, then, is largely experience. Experience, in turn, is life. Life is the potter. The movement of the wheel is the rhythm of continuity and variety in life.

With capacity, unlike to be sure, but nevertheless present in considerable degree, generally admitted, let us turn our attention to the meaning of "liberating," the first word in the title of our problem. To liberate is to make free. To make free is to make active. To make active is to make productive. To make productive is to permit and encourage the use of possessed materials for the construction of new or different ones. This is true both in the realm of things, as generally understood, and in the ideational realm. The two, things and ideas, are blood relatives. More accurately, they are identities, their difference being wholly that of perception. Thus, then, liberated capacity in different individuals may take not one but many directions. The same is true of any one individual. The ultimate criterion of liberation is production. Without production, liberation obviously has still some strings tied to it and is not true liberation at all. The sequence is liberation, activity, production.

In this connection we need to exercise wisdom in our interpretation of the word production. An idea is as truly a production as is the physical representation of it. The idea, in fact, is if anything more basic. A doubt or a question is just as truly the sign of liberated capacity as is an answer. What I am saying here may perhaps be stated more clearly by these stanzas from "Rabbi Ben Ezra":

> Not on the vulgar mass
> Called "work," must sentence pass,
> Things done, that took the eye and had the price;
> O'er which, from level stand,
> The low world laid its hand,
> Found straightway to its mind, could value in a trice:

But all, the world's course thumb
And finger failed to plumb,
So passed in making up the main account;
All instincts immature,
All purposes unsure,
That weighed not as his work, yet swelled the man's amount.

This leads us rather directly to a consideration of the meaning of composition. Before briefly examining that term and its broader implications, I would emphasize something that was said a moment ago. It will be recalled that the statement was made that "the ultimate criterion of liberation is production," and that the "sequence is liberation, activity, production." It should be held in mind, therefore, that by liberation is not meant activity of a tail- or rainbow-chasing variety; that liberation is not an end in itself, but a means; that activity is not mere movement of a merry-go-round sort; but rather, that by liberation is meant opportunity for activity which may become productive and perhaps ultimately really creative. The frequency with which we observe liberation and activity made ends instead of means seems to demand the removal of all doubt on this point.

We may turn now to the meaning of composition. Because of its importance to education as a whole, and in view of what has already been said here, let us examine the word freed from the restrictions which conventional school usage has given to it. In other words, let us, for a moment, completely rid our minds of the traditional school meaning of the term "composition" and see the word and the act in their broader and richer significance. Let us frankly ask, "What is a composition?"

It may be stated that a composition is the organized symbol of an experience. The act of composing is the act of relating things to other things, or ideas to other ideas, or things and ideas to each other. To compose is to arrange, to organize, to rebuild material that is possessed so that new, different, and more complete uses are possible, and fuller meanings are developed. The power of physical composition is possessed by all the higher animals. A robin's nest is distinctly a composition. So is a beaver's dam. Both are, so far as we know, the products of functioning instincts. That, however, does not deny their place as compositions. The thrush's song is a composition, so lovely a composition that man seeks to imitate it in his music. Among the highest animals, men, composition takes many forms. The heap of clay moulded with dexterity into a human bust is a composition. The collection of intricately associated lines and colors that suddenly forms a face, or a tree, or a river, is a composition. The groups of curious,

differentiated symbols distributed with baffling irregularity over a page of music make a composition. And let it be noted again that all of these are organized symbols of experience.

We might go on indefinitely in this vein. But perhaps the point at which I have been aiming may now be put without too great fear of contradiction. It is this: that composition in this large and fundamental sense is almost if not completely synonymous with the terms "production" or "creation" concerning which we were speaking a moment ago. In short, may it not be affirmed that composition, as we have discussed it here, is the many-guised product of liberated capacity? To put it even more positively, may it not be declared that composition, in this large sense, at least so far as man is concerned, is the ultimate end of effective intelligence? Unless all of our assumptions and interpretations are hopelessly at fault we may arrive logically at that conclusion. This is maintaining that liberated capacity exhibits itself ultimately in the form of some type composition. The types are as numerous as the crafts and arts that man now knows. Man has expressed himself in many ways. He will express himself in more and new ways. The product of each of these ways is composition. And, on the basis of that conclusion, we might examine all of our nicely compartmentalized curricula and methods of instruction with startling and none too happy results. That, however, is not our purpose at this time.

Rather, it is our purpose now to restrict our view sharply and to narrow our attention to that specific phase of composition generally known as writing. If I have made myself clear up to this point, it should be apparent that the remainder of what I have to say will be in the nature of candidly inspecting some of the implications of the foregoing considerations as they relate to our work as teachers of English composition. Keeping in mind, therefore, what has been said about capacity, liberation, and composition in general, let us ask ourselves certain questions about our particular species of composition and attempt acceptable answers.

First, then, let us ask simply why people write? We get our answer from an observation of mankind of all times and places. People write and have always written, whether they be professionals or amateurs, for two closely related reasons. They write so that they may communicate their experiences, beliefs, doubts, and opinions to others. These experiences, beliefs, doubts are the results of living. More precisely, they are life itself. People write, then, to interpret life, to illustrate phases of it, to live it again in retrospect. Almost all writing is of this sort.

There is another though scarcely a different reason for writing. People write to answer self-proposed questions; they employ this overt means of expression so that they may find tentative solutions of difficulties. This is what we really mean by the phrase self-expression, although in usage we have tended too greatly to narrow that term. A prominent American poet said to me once, "When I am seriously troubled I write myself a poem about it. I find my answers that way." The same thing is illustrated by another remark that was made to me.

A famous English novelist invited me to call upon him while he was in America. I did so. I found him pacing the floor of his quarters in dressing gown and slippers. His table was littered with manuscripts. Having greeted me, he launched forth into a veritable tumult of sociological discussion. Questions that he put to me, he forthwith answered himself, much, I must say, to my relief. My only activity was an occasional nod or an attempt at a knowing smile. At the end of the hour the famous man approached me with extended hand and said, "Thank you so much for coming. This is the most stimulating conversation I have had in months." Somewhat abashed by the abruptness of my dismissal, I took my departure. Naturally, I at first thought that I had been rather unceremoniously laughed at. But upon reflection I knew what had happened. When the author's next book appeared, which was within a few months, I eagerly read it. There, sure enough, forming two long chapters, was the material of that "stimulating conversation." This time, however, there was a conversation, but that was only the result of his more dramatic arrangement of his own monologue. He, too, you see, had solved his problem by giving it overt expression. The process would have gone on whether I had come or not. I had served merely as a reason for seeing it through orally before it was written down.

The inference should not be difficult. If man ultimately writes to recount and clarify his experiences and their meanings for his fellows or for himself, should that not be the chief and ever-present reason for children's writing? The answer is obviously affirmative. Further, there will be no serious disagreement theoretically on the point.

But here is one of those cases in which theory and practice reside in opposite hemispheres. In practice we teachers of composition seldom even permit writing in this true sense. Instead, we broadcast demands for lifeless exhibits of punctuation marks, capital letters, indentations, types of sentence, and forms of discourse. And, as a result, we do not get even those; nor do we deserve to. In effect, we say to the youngster when he takes pencil in hand: "Here, boy, put that

down! First you must learn this grammar and that rhetoric. The idea of your trying to write before you have mastered these things! Get your form first and your ideas will take care of themselves." And having said this to him almost as soon as we first laid hands on him, we have kept on repeating it to him for emphasis and, I suppose, to prove to ourselves that we were right. The outcome has cast its shadow before it. The pupil has learned little about technique and nothing about writing. Of late, too, we have felt ourselves morally vindicated, for there has arisen and multiplied a melancholy cult known as standard testers, which, like other cults, would seem to create a god in its own image. What could be objectively tested, said they, should be taught. Happy in our seeming rectitude we have salaamed, bent our necks, and even further lost our heads.

My quarrel is not with technical correctness, however. It is with empty correctness, with technique for its own sake, with letting form be the beginning, the middle, and the end, the "be all and end all" of our composition work with boys and girls. My quarrel is with the exaltation of mere means to the heights of ends. The rejoinder is made at once, "But, even this great amount of emphasis upon formal details has not made pupils write correctly." Of course it has not. And furthermore it never will. And even if it did, of what value would this fleshless exactitude be? Of no more than Croesus' gold. Of no more than the odor of sanctity in a famine. When children are first permitted to see the real purposes and rewards of writing itself, they may be brought to see the reasons for writing correctly. And when they indulge in it for those reasons, they may be brought to strive to master the means that will serve them. Until then we may as well endeavor to get them to write well by training them to skin the cat or to wiggle their ears. Moreover, writing for these real reasons that have been suggested liberates capacity, for it requires and produces thought, and thus permits intelligence to become effective.

We may now ask our second question. It is just as simple as the first one and as full of dynamite for us as composition teachers. It is this: What do people write about? The answer is as simple as the question and is implicit in what already has been said. People write about themselves. What does "themselves" mean? It means their experience, their doubts, their longings, their fears, their expectations, their problems, remote or immediate, their relations with other people, their likes, their hates, their theories, their beliefs, their evaluations of what others have written or done. In short they write about life. Why they write about it and eagerly want to write about it we have already seen. By writing about it, they live it more fully, share

it by comparisons and contrasts, and understand it more completely. By writing about it they test their experience, evaluate their conclusions about it, reflect upon its meanings, and consequently live it with greater integration.

If these are the materials of writing, of all true composition, what others should be the materials of composition in school? No others, surely. But someone smiles with lofty commiseration and says, "What do mere children, children in the third, the sixth, eighth, tenth, eleventh grades know about life?" My reply is: Make yourself invisible and mingle with them for a while. Or, better still, be the kind of a teacher or parent who does not have to be invisible in order to find out what these youngsters are thinking about, and speculating about, and doubting about. Perhaps they do not know about our lives, yours and mine, but they do know about theirs, and they are sharply curious and analytical about them, too; and, as for ours, the chances are they are making some pretty shrewd guesses in that direction, also. Oh no, we need not worry about their ignorance, about their lack of materials. At no time will their interests be more varied, more abundant, more eager. And never again will more gracious opportunity be offered for the creative use of these materials of life and the sounding of these overflowing interests. This knowledge, this wonder, these interests, these doubts, all these are what we have called capacity. And they form capacity of the most dynamic quality.

But the liberation of this capacity so that it may be productively effective is not easy. Why? Because school processes of the child's past have conditioned him against voluntary release. To be sure we have said to him, "Do!" But it has always been, "Do this," followed by "Do it like this." In effect we have said, "What you know and are interested in may be all very good, but you must remember this is school. We, your teachers, who are wise folk, and the good board of education, and the great state legislature have decided what you should know and be interested in, and we have arranged it all in nice little pellets for you. Now all you have to do is sit over there on the other side of my desk and open your mouths and shut your eyes." To be sure we have said to him, "Think!" But it has always been, "Think this," and "Think like this." In effect we have said, "We know you may have some thoughts of your own, but they are probably wrong; and besides we have not time for them, anyhow." And, of course, we have not meant think at all. We have meant accept and swallow. We have said the bitter taste would pass in time. And it has—along with what caused it. This description applies as poignantly to the upper reaches of education as it does to the lower. Whatever

may be said in support of such tactics as they have related to other phases of the pupil's education is likely of doubtful soundness. So far as composition is concerned, there is not even that shadowy pleader.

The composition teacher, therefore, at whatever later level he meets his pupils, is faced with what appears to him to be vacuity, a blissful emptiness of ideas. He is confirmed in his impression by the statements of his pupils themselves that they have nothing to write about. And, instead of examining this conclusion of his and theirs and finding it absolutely baseless, as it really is, he accepts it and proceeds to ladle out more composition exercises, meaningless technical acrobatics, purposeless and dull, and given the colorless misnomer of "themes." In so doing he is adding one more layer to the heavy blanket that is already smothering personality, suffocating capacity, and paralyzing intelligence. Having submitted to this major operation himself as a pupil, he now becomes, in turn, the new administrator of his acquired stock of anaesthetics. And the vicious circle repeats itself like the cadences of an aboriginal dirge.

But if this is most of what we see in the picture, it is not quite all. Now and again there appears a composition teacher who by accident or thoughtful design sees beneath the incrustation. There he perceives the "pulse of the machine." Having perceived it, he sets about to stir it into the creative activity of which it is capable. It begins to dominate, after having been dominated for so long. Freed, it becomes active. Active, it becomes productive. Productive, it eagerly grasps at means for making its productivity effective. Composition teaching functions, having first awakened the dormant capacities wherein it may function, not for its own sake, but as a means for effective expression. It functions because it sees pupils as entities, with differing needs, with varying interests, with individual capacities. It functions because it does not see groups of pupils as awkward squads to be regimented, close-cropped, and marched down the corridor, eyes right, in the goose step. It functions, because the teacher, having liberated his own capacity, first as a human being and then as a teacher, has been able to help his pupils to emerge first as themselves and then as learners. Too great emphasis is impossible on this point. In no true sense can the learner be developed until the individual has appeared, both to himself and to his teacher.

What is the outward metamorphosis that has occurred in this composition classroom? Ideas and experiences have supplanted grammars and composition books and rhetorics. Thought has supplanted memorization. Understanding has supplanted indoctrination. The teacher has supplanted the top sergeant. Composition in its true na-

ture has supplanted exercise-doing and practice in composition technique. Expression uses technique instead of being used by it. In short, the real purposes of written composition are guiding the activity, and the real materials of written composition are being employed. What I am describing here is not an idle wish or a vagrant fancy. I am describing composition classes with which I am intimately acquainted and in which I have participated.

The pupils have come to see that originality means nothing more terrifying than being themselves in what they say and how they say it. They understand that the relation of common occurrences may result in original writing if these events are enlivened by the presence of personality; and they discover that personality is neither an absolute quality nor the exclusive possession of a few. They realize that the essay in which a Lamb tells of his sister or of his school days is as original as an arabesque by Poe or a mystery of Conan Doyle. Moreover, they welcome the knowledge that imagination consists of interpretation and finding meanings and that it is not sheer invention, as they had supposed. They find that a Burns or a Sandburg is as truly imaginative in his interpretations of what is all about him as are a Coleridge or a Scott, whose interests concerned distant times and faraway places. Further, they learn that what they are deeply interested in, whether ideas, people, places, or events, they can write about in such a way as to compel the interests of others. Similarly, it becomes apparent to them that any one event, or idea, or question presents many phases, like the facets of a jewel; that it submits to many types of treatment; that it provokes results as various as the experiences and personalities of the writers who use it in their composition.

If these are the outward changes in the composition outlook, what of the product? The product is as different as the outlook. Employing the real materials of composition and employing them for the real reasons of expression, our pupils will produce composition that is worthy of the name. Instead of a paragraph of narration, a story or a little play is the result. Instead of an awkward, stumbling exposition, an essay is written; or the idea is sung in a poem. The teacher instead of receiving a pack of dull, lifeless recitals of "What I Did over the Week-End," or "How to Make a Pie," or "Pioneer Days," stolen from the encyclopædia, receives a group of papers as various in matter and manner as the members of his class—stories, poems, essays, dialogues, sketches, satires. They are not all equally good, of course, any more than the product of professional writers is; but they are all honest, they are all real, they are all the expression of active individuality.

This has come about very simply. The materials of the composition class have related to life itself—experiences in it, ideas about it, doubts concerning it, feelings about it. Pupils, books, and the teacher have made their contributions. The other school subjects have made theirs. Discussions have taken place, and arguments. Illustrations have been offered, some from literature, some from the lives of the pupils and the teacher. Questions have been asked, and curiosity stimulated. Subjects for papers have been suggested, many of them, but none of them mandatory. Expression of opinion has been encouraged. There have been clashes of attitudes and traditions. Authorities have been sought. Interests have been aired and evaluated, pro and con. The teacher has guided, stimulated, encouraged, preserved peace when necessary. No topic has been taboo, nor any honest conviction. Pupils have jotted down reminders. So has the teacher. Considerable real reflection has occurred. The writing has gone steadily on. Sometimes the materials of the discussions and the subjects on the lists have been used, sometimes not. That has not mattered; that has not been the purpose either of the discussion or the subjects. They were to lead, not narrowly to direct. One feels certain that most of the pupils have been thinking, that they have been revealing their capacities, that they have been developing their ideas, finding meanings in their experiences and those of others.

As their writing is submitted, one finds poems frequently, not because they have been demanded (Heaven forbid that!) but because the pupils have observed that poetry has ever been a favorite means of expressing ideas and interpreting life. Among these verses is one, written by a ninth-grader who is developing a healthful iconoclasm:

THE GREEN OF THE GRASS

The grass was green last year, you know.
It died when frost came, and the snow
Was like a white sheet on the ground,
So not a green blade could be found.
When winter went and snow was gone,
It all was brown upon our lawn.
At last our Lady Spring is here;
The grass is green as 'twas last year.
Why not black, purple, red, or blue?
Why not? Why not? I ask of you.

A tenth-grade girl, very much in love with the football captain, promises plaintively:

I will wander over the hills with you,
And show you my secret places,

I will take you deep 'neath the forest trees,
And show you fairy faces.
I will show you the whitest white of the clouds,
And the bluest blue of the skies.
I will show you the shimmering water's glee,
That matches the sparkle in your eyes.

And an eleventh-grade girl, who has vigorously contended that those who forsake shall be more forsaken as she has pondered upon Arnold's poem, tries to prove her contention in:

REMORSE

They're dancing, below, on the sea's sandy floor,
And they're singing. Ah! Would I could hear them once more;
And they're carefree and gay, down there, under the sea.
Do you think that my children remember me?

I sat on a throne made of coral and shell,
And, often, all day, my mer-husband would tell
Me how great was his love, how he ne'er would forget
Me, his own mortal wife, his dear Margaret.

My children adored me. Ah! Blessed were they
In their castle of pearl in the heart of the bay.
Oh! Why did I leave them? So happy were we!
Do you think my mer-children remember me?

An eleventh-grade girl, who hates what she feels is injustice in *The Scarlet Letter,* judges those who have judged when she writes:

HESTER, DEFIANT

A blasted love, a shattered hope, a wasted life, they say;
But dare they judge, those frozen men, whose high
Resolves and noble thoughts are drear as winter sky?
They do not know what joy is, nor what it is to play.

They mark me with a scarlet brand. They may—
And what care I? Sinner I am, but my lips are free from a lie;
Their very souls are dark with hidden shame. Why should I sigh
For their eternal inward strife? My glorious crime is open to the day!

Outcast and alone, yet, stupid men, you cannot fill my heart with fear,
Ignored by women, insulted by each passing churl;
Still, you cannot humble me with curse or rod.

My head is high. My comfort and my cheer
Lie in my elfin child, my baby wild, my calling, haunting, mocking Pearl.
O hardened Fools! O cruel Men! Hester will answer only to her God!

There are many more, as different and as real as the boys and girls who wrote them. The verse may be technically imperfect—what verse is not?—but the essence of poetry is in most of them.

They are not all writers of poems, however. This eighth-grade boy, whose interest is mechanical, maintains stoutly that the electric locomotive is like a joyous human, exultant in its mighty and friendly power. This ninth-grade boys sings a cowboy ballad and finds a story in it. This tenth-grade girls has poked about in empty houses and stuffy second-hand shop and writes of "More Places We Pass By." This mousey-appearing girl makes us roar and her parents squirm when she writes "Sunday Breakfast." This boy is openly mobbed but covertly applauded when he writes "Just before the Battle, Mother," in which he sharply satirizes the football coach's sentimental oratory to his team just before a game. And this pragmatically minded boy comes back with a defense of the system on the ground that it works.

I might go on indefinitely. But that is unnecessary. English composition has continued to be very hard work, but it has ceased to be formalized drudgery. Capacity has been liberated and stirred into activity. Productivity has resulted. Intelligence has been given a chance to become effective. In short, English composition has shown signs of being a truly educative activity. And finally, and most important of all, is the effect upon the pupil himself. His stories and poems are one product of his liberated capacity. But this, after all, is minor. What has happened to him in the process is of chief importance. He, in short, is the major product.

Geography

The Place of Home Geography

C. F. Moses[1]

The consideration of this topic involves three steps: What is cultural atmosphere? What is home geography? and What is the relationship of the latter to the former? For our purpose we may conveniently define atmosphere as "surrounding or pervading influence or condition" and culture as "the fruiting, the enrichment, the realization of life." The full life is breathing an atmosphere of understanding sympathy with its environment, of security in the unity of existence. Human geography has been defined as the relationship existing between man and his environment. More amply stated it is a unity which consists of man living in his environment. Home geography, then, considers man living in his home community and includes a study of the features of the local environment that condition or may condition his life, his reactions in this environment, and such natural adjustments as continually take place in this relationship. It is of vital interest in youth and continues of interest through life.

This interest we have seen in our work this winter. Primary pupils in a one-room rural school have been having a glorious time keeping records of their weather, formulating a description of their climate, plotting the valley lands and hill slopes of their neighborhood, finding out why the roads are located as they are, studying the distribution of the wild trees and grasses, learning the requirements of crop plants and trees and the spots in the local environment where they thrive best. Under the guidance and inspiration of a capable teacher, they have decided the facts which can and need to be obtained and have gone after them with a purpose. They have taken field trips, collected all sorts of materials, and even made land-utilization maps as enthusiastically as our college classes. The same thing has been done in our city schools and in the higher grades, the method being modified somewhat to suit the environment. College seniors are following a similar outline, though more elaborate and more narrowly geographical, in a seminar course and are unearthing and organizing material and gaining sympathy and enthusiasm as surely as are the younger pupils.

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The results of such a study of the home community are: (1) increased interest in and understanding of home and community life and problems; (2) opening of new doors to understanding and enjoyment, to richness of living; (3) improvement of the adjustment of the student to his environment, economic, social, aesthetic, spiritual; (4) modifications of environment to permit fuller life as a result of complete understanding of the existing conditions; (5) an extension of interest into the world environment with a sympathetic understanding of other peoples and their problems, a growth of the feeling of universal brotherhood; (6) a more realistic approach to history, literature, and art; and (7) a state of mind that makes it possible for people to live culture rather than merely to partake of it.

If these statements are true, then the place of home geography in the cultural atmosphere must indeed be most important. It stands as one of the great unifying elements in human existence. It leads to understanding, to appreciation, and to enjoyment—eventually to unity and complete living.

Geography as a Cultural Factor in Education

Albert Perry Brigham[1]

In giving me my theme, you have invited me to begin back in the Victorian era. It is full of meaning to me that President Rightmire of the Ohio State University, in his greetings to this conference, wonders "whether we have been right in shifting the aim to the practical and making culture, if it is in the scheme at all, a by-product." And Professor Van Cleef, in announcing this session, finds response in me in using the phrases, "urgent materialism" and "vocational fetishism," and in pressing the need of an "educational balance." The late president of a great educational foundation, Dr. Wallace Buttrick, says, "I have little patience with vocational training in college, the taking of valuable time for the learning of a trade." Not to learn to make a living but to "make living worth while" is Dr. Buttrick's plea. Not long ago I asked a research doctor from one of our great medical schools how much pre-medical work he would like to see done in the undergraduate course. Not quoting his precise language, his answer meant—as little as possible. He called for deep and wide foundations.

Some things reconcile me to Victorian times, for example, when the twentieth-century reporter multiplies that worthless word "color-

[1] Colgate University.

ful"; when the pedagogues forever talk about "tool subjects" and "skills," and when they imagine that the doctrine of interest or the use of problems has been unknown until they uncovered it. I would not depend more on intelligence quotients than on common sense and on the slow unfolding of young lives. I would use these new things with caution and not as if I could measure the immortal spirit with a yardstick. I am not against modern education. In as far as it uses the progress of science, the amelioration of suffering, the growth of charity, and the broadening of thought, I would stay with the education of the twentieth century.

Much was lacking fifty years ago, but there was a cultural ideal. My teachers in college were not all good scholars; they had little salaries but big purposes. Bathtubs and safety razors, automobiles, and the radio had not entered a slow world, and football and house parties were not dominating a dreary jungle of so-called "extra-curricular activities." There was much non-social selfishness, and most amusements were sinful, but to refine and enrich the mind and heart were objects of desire. Repose was possible; meditation was occasional; the classics of great literature were read and put in the memory, in the absence of the *Saturday Evening Post* and the Sunday newspaper. And we gathered in village halls to hear Emerson, Bayard Taylor, E. P. Whipple, Anna Dickinson, Horace Greeley, and Wendell Phillips.

We should not worry too much about tendencies or about the professors of education. Pendulums have a way of swinging back. Make education a sweet dream, and the hard facts of the universe will drive us back to discipline. We shall stop spoiling morons by pushing a farcical "liberal" education upon them, and we shall no longer throng the higher schools for social and athletic reasons.

What is culture, and what can geography have to do with it? Let us call it the refining of the mental and moral life. I assume that we are more than a lucky meeting of electrons, that we think, choose, and decide, groping toward an eternal norm of wisdom and right. It is a poor time to deny the spiritual when whispers as well as shots are fired around the world. Let me quote Tylor's definition of culture: "Cultivation in the wide ethnographic sense, knowledge, belief, art, morals, law, customs, all that man acquired as a member of society." Now, what single subject, and notably in the elementary field, so meets these requirements as well-taught geography? Twenty-five years ago I said to a body of teachers meeting in Chicago: "The whole background of history and half the meaning of human life is open to the student of geography who comes to it as

dealing with the environment of our race." Nothing in all my later experience has made me think this statement too strong.

What then is a cultivated man? He is much more and much else than I can define, but these two things can be said of him. First, he is at home in nature. I cannot tell you all that I mean by this, but some of you know and will fill out my skeleton of expression with flesh and blood. One old teacher of mine changed the current of my life. He did not subject me to intellectual measurements, but, in my junior year as a lecturer in natural history, he thrilled me with the story of nature. A keen and devout man, there is on record a prayer of his in which he thanks God for "making the great and wide immensities of space and time homelike, near, and familiar to my heart." Revile "subjects" as you will, prate about "the child" as you may, such a teacher of such a subject needs little modern pedagogy. The cultivated man knows his relation to nature, apprehends its beauty and grandeur, and bows before its mystery. To him so-called mechanisms defy materialistic interpretations. He is but half cultivated who has not trained his time sense. Where will you get this training? In history? History gives but the yesterday of existence. It is this morning's sunrise. The eons are back of it. Geology gives it, but less than one percent of secondary students get it and but a minor group in the university. You do get it in physical geography. Here you touch some in the high schools and multitudes in the grades.

You can unlock long durations to the young mind in the hundreds of thousands of years of ancient glaciation, in the millions of years of coal formation, in the development of the forms of the land, in the study of accumulative, deformatory, and destructive processes. The superstitions of our time in America would be largely dissipated if millions more of good people knew how long the Creator has been in doing things. Here is the essence of culture. Most people do not study astronomy and thus strain after the spaces of the universe. The next best and the only alternative is geography, with its sun and planets, its moon, and continents and oceans. Professor Bagley has recently set forth the enormous gain in interest and thrilling knowledge to be had in tracing back what we know of the earth to the discoveries and experiences of daring explorers.

Quoting again from an address of my own already named, "As with time, so with space, struggle with both fundamental ideas, through real studies of geography, geology, physics, and astronomy, and you have lifted and made large the whole of life, introducing thoughts of humility, or modesty, or awe and reverence." What

would that be, if not a contribution to culture? No other theme than ours in the elementary or secondary curriculum so calls out the imagination or helps so much toward seeing the invisible. This is our earth, the only sphere that we have well in hand, it is what we are chiefly concerned about, and to know it is the foundation and much of the superstructure of culture.

Do I hear somebody say that physical geography belongs to geology? Yes, it does, but it is a section of geography, also, too basal and large to be lost or mutilated in our program of socialized studies so-called. I have been shocked to see the pitiable shreds of geography that emerge in some of these outlines of combined subjects. Nor can geography do its work in that smattering which too often results in courses of general science. In a list of secondary electives sent me by the Bureau of Education in Washington, geography is not named, and general science appears in large numbers. This chopping up of geography into social aggregates or general-science combinations is to be regretted. My experience is that it is only on rare occasions that we like to turn our steaks, chops, roasts, and potatoes into hash.

Climate and its shifting displays as weather enter so deeply into the whole fabric of human life that ignorance of the atmosphere is deplorable. Recently, as often before, Professor Ward has recounted the varied and intimate relations of climate to man.[2] Climate pursues us, penetrates us, lives with us, conditions our activities, the vigor of our bodies, the tone of our spirits, by day and by night, season by season, year by year, at home and in our wanderings. He is only partially educated who has no rational knowledge of the atmosphere, which we are ever tempering between shivering and perspiration, which we breathe, which carries our voices, our letters, and our persons over the world.

The distribution of rainfall affects every human being from his birth to his death, controlling all individual and corporate activity in agriculture, manufactures, communication, transportation, and the regimen of food, raiment, and the home. Our North from Minneapolis to Maine is different from our South, following the Gulf, but temperature, itself a climatic factor, does not here make such a profound change from section to section as there is between our wet East and our dry West—no double play of words here. Western agriculture and all western life and social existence are largely based on deficient rainfall, and the practice of watering the fields, to say nothing of desert atmosphere, color, and scenery have somehow wrought upon

[2] "Climatology and Some of Its Applications," *Scientific Monthly*, February, 1927. pp. 156-71.

the dwellers in an arid land. Returning to Professor Ward's list of human interests affected by climate, we find insurance, engineering, aerial navigation, the very forms of the land, and the origin and permanence of some mineral deposits. Former conditions of glaciation, which is climatic, we may almost say control the life and work of uncounted millions of people in North America and northern Europe.

This is leagues away from a plea to know the air for utilitarian reasons. The study of society and the philosophy of life make partial and incomplete a culture which does not take into account the largest factor in our environment. The only chance which I see for our youth entering this great field of appreciation is through the geography class. We have come a long way from the fear of "night air" to our knowledge of malarial mosquitoes, and from almanac forecasts of weather, but immense gulfs of ignorance remain to be bridged before we know as well as we ought how to live on this planet. The call for a cultural interpretation of your subject is a clear note out of a rather confusing and turbulent mingling of pedagogical sounds. This is called, and in many ways truthfully so, an age of progressive education, but, after all is said, it is an age of abnormal stress on utility and a wearisome succession of technical educational *isms*, baffling to the student, and appalling to the teacher.

If appreciation of our environment in nature is the first element in culture, the second is the appreciation of the human environment. I need not remind you in the age of radio that our human setting is all humanity. The cultured man is emancipated from provincialism and brought into relations of charity and partnership with the whole human race. I am an American to the core, in America ancestrally since 1636, but I deplore much shallow talk about "100 percent Americans" and the super-nationalism out of which we are slowly and with some jolts emerging. Israel Zangwill well said a few years ago that the full fruit of nationalism is war. We are yet curiously mixed in this country. We have high altruism, a thoughtless sentimental pacifism, and sound internationalism growing in some minds. With these qualities are national conceit, an isolationism absurd to consider in the twentieth century, and a dense ignorance of the men and motives of other lands. Culture, the arts, great thoughts, real literature, all that joins itself to the best in history, to the noblest achievements of the race—these ideals have no easy road in this age of speed and change, an age in which bureaucratic influences threaten to engulf and standardize, for bread-and-butter purposes, all our education.

We in America have no monopoly of provincialism. A noted American scholar was looking over the Bodleian Library with a high

Oxford official. The American commented, let us hope courteously, on the paucity of American material in that great library. The Englishman's reply was, "Well, what of it?" Knowledge of America was as important to this Englishman as it was to George the Third or Lord North. No American loves Oxford and some Englishmen in Oxford or has more honor for all England than I have, and yet Oxford with all its glory has been known as the "home of lost causes." Oxford needs our science, and it is getting it in a noble school of geography. Every English university, new and old, is turning to geography. They need it as we need it if the two great English-speaking peoples are to fill their place in the world. Let me add that American history has professorships in the universities of Oxford and London and that the best and broadest minds in Britain want to know America.

If Europeans, otherwise highly cultivated, had been free from provincialism, the world would have been spared much blood and much money. The year the great war opened, a German youth said to a young American, "I suppose all American boys are on horseback." He was visualizing forests and Indians as general in our country. Said a German soldier to an American professor twenty years ago, "We could march an army across your country in a week." The answer was, "How far can your army march in a day?" A retired officer of the German army said to one young man in 1914, "Why don't you take Mexico?" It was not possible to convince him that we do not want Mexico. All this is provincialism, a narrowness which would have been dispelled and is being dispelled by geographic knowledge gained at fearful cost. The war drove Germany to new knowledge of the great country across the sea and has made her respectful and tolerant. It is safe to say that the offensive national spirit in some German school books will disappear if it has not already gone. What is the essence of culture if it is not to know what other peoples are, how to treat them, how to respect them, and live in peace with them? And what subject but ours can give to the unnumbered millions of average citizens this vital factor in world life?

We are seeing that national conceit and racial prejudice are confined to no people. An educated, shall we say cultured, Canadian woman pronounces us "biologically inferior." We are becoming a blend, to be sure, but who knows that it is "inferior"? We must believe, I suppose, that Canadians come here for business and education and to the pulpit primarily as missionaries to a needy people! What other reason for mingling with inferiors? Our own American

folks do not escape. The wife of a clergyman in a highly developed, let us say a proud and aristocratic, New England city said to a lady from Fargo, "How many states are there between North Dakota and the territory of Washington?" A resident of a Cape Cod village had spent a winter in California. He had liked the experience, but his final comment was, "I would not give my three acres on the Cape for everything west of the Hudson River." Well-to-do, gentle, and respected, had he culture? Yes, and no. My ancestral roots wholly and my present joys considerably are anchored in New England, but I fear there are "down-easters" who do not know the difference between New York City and New York State.

We are somewhat provincial in our laws, for in spots we would abolish the dictionary, the Bible, and Shakespeare, as dangerous or obscene, and refuse to permit the schools to come out of the dark ages. A member of a Cabinet in Washington is said to have called to a subordinate when a distinguished Asiatic was at the door, "Let the Jap come in." We call, no, not we, but western fruit growers call for a slap at Latin America and at the tables of the poor in the form of a tariff on bananas. Others demand high duties on art as if American intelligence, American idealism needed to be protected from foreign competition.

"See America first" is a provincial commercial slogan. "See the world as widely as possible as soon as you can" is what I say to all young men and women. Geography, in books if it must be, in travel if may be, will enrich your memory, broaden your intelligence, and make you good citizens. If this is not culture, then I have missed and misused my theme.

Some of us have unthinking faith in our racial superiority. Some heap ridicule on all who do not think quite well of so-called Nordic traits and achievements. Some Americans are cocksure we are best. But this is passing, and self-scrutiny is coming in, the mark of maturity and a wider outlook on the world. We need not with Mencken spurn American ways, and we need not with Whitman exalt the prairies as the best fruit this world has produced. There is a middle ground in all these things. We need geography and more geography, intelligently taught, as a liberalizing factor in all our human relations. Geography puts us in contact with the earth and its people in appreciation and charity and never has this been so imperative as now when distances are reduced almost to zero and instant action on all problems is possible. This is a world of change. If you do not believe it, try to keep up to date a group of textbooks in geography. Something is always different overnight from what it was yesterday.

Look at Britain with me—take Shakespeare's lines:

> This fortress built by nature for herself,
> Against infection and the hand of war.

Generations after Shakespeare, the poet Dibdin was true to his time but not to ours when he spoke of "A right little, tight little island." And within the memory of some of us Tennyson proved himself a poor prophet, dedicating to his queen this tribute to his land:

> Broad based upon her people's will
> And compassed by the inviolate sea.

All very eloquent, true to old days, but missing the great problem of British statesmanship in our time—how to deal with an island that is not an island, when England is both the beneficiary and the victim of modern invention. See London employers rushing their staffs to basements in German air raids. Consider the submarine, which brought England almost to starvation. Observe the pros and cons of the Channel tunnel, which is sure to be, and imagine yourself in London, booking passage on through trains to Madrid, Gibraltar, and Timbuctoo; to Jerusalem, Cairo, Khartum, and Cape Town; to Constantinople, Bombay, Calcutta, and Rangoon.

I am told that the scientists in the American telephone laboratory know how to send your voice and your picture around the world, the only limitation is that they cannot offer the service at bargain rates. Chief Justice Taft talking with Byrd in the Antarctic Continent is a far cry from the now venerable General Greeley near death in the Arctic when found and brought home by Admiral Schley. Twenty-five years ago, I referred to the time when the "air should be navigated, telephone messages sent across the sea, the North Pole be found, germ diseases robbed of their terrors, and communication opened with Mars." The first three have been done, the fourth is far advanced, and only communication with Mars remains. Tell me if a cultivated man can do without a knowledge of geography!

Seventeen years ago in a western capital, the governor greeted forty geographers of Europe and a small group of Americans who were their hosts in a transcontinental excursion. He amused us by calling us "men of culture and refinement," but he showed his good wit by saying that "he never expected to see so many men who knew so much about the earth and owned so little of it." Unwittingly he had linked culture with geography. As for title deeds and literal possession, he was right about us. But let us go far deeper than did the governor. Those fifty or sixty men did own the earth, because they knew it, because they appreciated it, because they knew what it means

to human kind. Men were there who knew and had made their own the interior of Asia, its mountains and wild deserts, the Antarctic Continent with its icy shores and snowy heights, the strands and fields of India, the long chain of the Andes, every country of Europe, the wide ranges of Alaska, and the islands of the sea. They knew the rocky foundations of every continent, the soil and crops of every land, the climates of the world, and the products and exchanges of all countries; they—in the profoundest and most real sense—owned the earth. Unconsciously, the practical, non-literary executive saw the embodiment of culture in a group of cosmopolitan men.

Not long ago the Archbishop of York said that a man thirty years of age who cares more for what happens in the athletic field than for what goes on in the League of Nations is a public disaster and a private calamity. We can know a trade, we can pay our taxes, we can conduct a home, and all this is well, but we are not fully grown, modern men unless we know the world. If a planetary knowledge of nature and man is not of the essence of culture, then you have assigned to me a vain theme. Knowing geography, one becomes adjusted to his environment near and far, has in himself sources of mental and moral satisfaction and may be a harmonious and forceful citizen of his community, his country, and the world.

You are missionaries, propagandists, advocates, not by argument but by your example in broad knowledge and high teaching, to make our subject known and give it its full power. A recent writer on the uses of literary expression ruled geography out of literature because "it has a single purpose to enlighten by words with the aid of maps." Geography, he says, deals only with a "plain statement of exact facts." What ignorance of our subject is here. How deep a gulf lies between the average opinion and the real meaning of geography. Many school heads, I gladly say, appreciate the meaning and value of geography, but many, far too many, go blindly on in the wilderness of lesser themes that clamor for a place in the school. Of them it might be said, with suitable changes of terms:

> A primrose by the river's brim,
> A yellow primrose was to him,
> And it was nothing more.

If geography is to contribute to culture it must be taught as a whole subject. It must not be dismembered and its mutilated fragments be confused in other studies. Few teachers of history, civics, and sociology are likely as yet, if ever, to be strong in geography. If ability exists, time is too short. Physical geography will be neglected, and there will be unrelated scraps of human geography.

The editor and publisher of a great library of classics published in 1860, Henry G. Bohn, the author of a *Pictorial Handbook of Geography* as well, said: "Geography was one of my earliest affections. . . . After half a century, I still consider it the most agreeable of pursuits." No theme is more permanent or more mobile. It changes because it is vital; it is in the stream of progress.

As I was finishing the preparation of what I have been saying to you, I found the newly published address of Professor Bagley before the geography teachers of the National Council, meeting in New York in December last. It is a rich contribution to our theme from high educational authority. I am quoting him in substance. In the development of universal education geography was the first field of specialized knowledge to be accorded a place in a curriculum designed for all the children of all the people. The introduction of geography was the first answer to the mandate to broaden the programs of mass development. In other words, the first significant effort in universal education was to lift the individual out of his local habitat and to give him a broader view of the world in which he lived. Liberal education liberates, frees the mind from fraud, superstition and error, from the local and immediate. In this same sense, geography richly deserves its historic primacy among the liberalizing studies of the universal schools. It is just as important now as it was at the outset. Our subject gives the best exemplification of the spirit and methods of scientific inquiry that can be grasped and appreciated by average minds.

This is the conviction of a master teacher of education. I may be biased as a geographer. Then take Dr. Bagley as your arbiter. The kaleidoscope of men, moving in time and space, conditioned by nature in its wide variety, such is your theme, such is your call. Respond to it, and you will bring enrichment, breadth, depth, yes, culture, to the youth of Ohio.

The Correlation Factor

Roderick Peattie[1]

American geographers are largely concerned with the economic aspects of the subject. The mental aspects have been scarcely considered. Historical geography should be studied not only as a basis for economic history but for social history as well. It is often more important to know how a man thinks than what he eats.

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Cultures are commonly the outcome of a distinct provincialism. The diffusion of cultures is commonly a matter of commercial contacts. The development of transportation has broken down the definitude of the provincialisms. Modern geography is tremendously complex because of the intermingling of cultures.[2]

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[2] The paper was followed by the discussion of this printed list of references on the relation between geography and cultural development.

Higher Education

The Junior College in Secondary Education

J. M. Wood[1]

THE PAST year has been one of rapid crystallization of thought on many phases of the junior-college problem. The institution is being permitted, at last, to wear swaddling clothes of respectability. Its place as a part of the secondary-school system is more definitely assured. The contribution that it is to make in shortening the period of general education is more generally recognized. In spite of these things, however, the basic problem of one year ago remains the same today. For that reason I crave permission to repeat a part of my address before the Junior College Division of the Department of Superintendence at the Boston meeting.

There is probably no part of the American educational system that is attracting more attention at the present time than are the secondary schools. The field that a quarter of a century ago was occupied exclusively by the high school is now filled by organizations known as the junior high school, the senior high school, and the junior college, nor is it longer possible to define either of these units in terms of years or of curricular content. A common basis in the discussion of the secondary-school problem seems to be the fact that all of these units are dependent upon a completion of a six-year elementary-school course. In some school systems this elementary period is followed by a two-year junior high school, leading into a four-year senior high school, which in turn leads into a two-year junior college. In other places there is a three-year junior high school, followed by a three-year senior high school, in turn leading into a two-year junior college. Again, there is a two-year junior high school, a three-year senior high school, and a two-year junior college. In all cases except in the last mentioned, it seems to be the unanimous agreement among school men that the secondary system should cover the eight years of adolescence extending, roughly, from the age of twelve to the age of twenty.

The administrative problem that confronts school men is, therefore, the wise distribution of time during the eight-year period. Shall it be organized into one unit of eight years, or shall it be divided into

[1] President, Stephens College.

two or more units? If the latter course be pursued, the question is immediately raised as to the most efficient unit, both with respect to curricular organization and to teaching efficiency. Wholly aside from the considerations of the curriculum, school men seem to be fairly agreed upon two propositions; namely, that the eight-year period is too long and that the two-year period is too short for the building of the student morale essential to efficient work. It is for this reason that the junior high school in so many places has absorbed the freshman year of the senior high school. For exactly the same reason, men who have been working in the junior college are convinced after years of experimentation that the two-year unit is not a feasible one and that, if the junior college is to live, it must extend its courses, either downward into the field now occupied by the senior high school or upward into the universities.

For more than a quarter of a century educators, following the leadership of former presidents, Harper of the University of Chicago, James of the University of Illinois, and Jesse of the University of Missouri, have pointed out the fact that the freshman and sophomore courses of the present liberal-arts college, now known as the junior college, are purely secondary in character and therefore belong in the secondary field. If this position, which is quite generally accepted, be sound, it would be a mistake for the junior college to extend its curriculum upward into the field that is not legitimately its own. The only alternative, then, is for the junior college to absorb the upper courses of the senior high school. If this be done, however, and the senior year of the high school be taken into the junior-college curriculum and organized on a junior-college basis, another serious situation is created. The senior high school, having given up its freshman course to the junior high school below and its senior year to the junior college above, becomes within itself the same two-year unit which has proved undesirable in the case of both the junior high school and of the junior college. It would seem, therefore, that the ultimate solution of the secondary-school problem must lie in the establishing of a three- or four-year unit. In that case, the junior high school should absorb not only the freshman year of the senior high school, as it already has done, but the sophomore year as well. The junior college, on the other hand, should extend its course downward to include not only the senior but the junior year of the standard four-year high-school course with a view to determining whether it will be possible through increased teaching efficiency, reorganization of subject-matter, and elimination of duplicate courses to complete in each case the four years in three.

This administrative reorganization will establish a six-year elementary school as at present, followed by a three- or four-year junior high school, leading in turn into a three- or a four-year junior college which leads directly into the professional schools of the university. It will be noted that the junior high school, extending roughly from the ages of twelve to sixteen, permits the organization of subject-matter and the adaptation of teaching methods to the needs and interests of early adolescence. The period covered by the junior-college unit, extending roughly from the ages of sixteen to twenty, permits the adaptation of the curricular content and teaching methods to the interests and needs of later adolescence. The longer unit also permits the school system to adapt its curriculum to the abilities of the students. In any case, the honor student should be able to complete each of the two units in a period of three years, graduating from the junior college at approximately the age of eighteen while the inferior group could be given an extended period. Should the four-year unit be retained, it is confidently believed that possible reorganization of the curriculum within the junior high school and the junior college will ultimately cause the word "junior" to be eliminated from both.

It is impossible to enumerate the implications involved in this proposal. Practically every parent is ambitious that his son and daughter should have the practical and cultural advantages of a college education. Under the existing educational machinery, this has been reserved almost exclusively for an intellectual or a social aristocracy. Under the proposed reorganization, the liberal-arts college itself would open its doors in every community now able to maintain a junior college. Through systems of consolidation, it would be brought to the doors of practically every community.

It was a belief in the feasibility of such a reorganization that caused the Board of Curators of Stephens College to begin and the North Central Association of Colleges and Secondary Schools to sponsor an experiment in the field of the proposed four-year junior college. Stephens College was granted a period of five years within which to try the experiment. The committee appointed by the North Central Association to supervise the experiment is composed of Dr. Charles H. Judd of the University of Chicago, Dr. L. V. Koos of the University of Minnesota, and Dr. George F. Zook, president of the University of Akron and former United States Commissioner of Education. This committee reports annually to the North Central Association of Colleges and Secondary Schools on the development of the experiment. Their findings are thus made available for the

information not only of other men working in the field of the junior college, but also for superintendents and principals of high schools.

The demand for such reorganization of curricular material and educational objectives and methods is responsible for the rapid development of both the junior high school and the junior college. It is impossible to think of them separately because one is the vitalizing unit in the lower and the other in the upper secondary field. These institutions possess two distinct advantages over their respective senior institutions. They are free from the traditions that hamper the free development of the senior high school and of the senior college. Unlike the latter institutions, they are the direct outgrowth of community needs and are not yet dominated by so-called intellectual standards. They represent a conscious and whole-hearted attempt to adjust the curriculum to the needs of the individual students. Since this is true, it is evident that those institutions should not be permitted to develop along traditional lines.

The Stephens College experiment with the four-year junior college is based upon the following assumptions:

1. That the essential elements of the work now done in the junior high school, the senior high school, and the junior college should be completed by the end of the twelfth grade. Should a longer period for general education be required, it is quite evident that the remaining two years should cover the upper-division courses of the liberal-arts college and should lead definitely to the baccalaureate degree.
2. That the junior college, however defined, is an integral part of the secondary-school system.
3. That the work of the junior college should be organized upon the collegiate as distinguished from the high-school level, just as the work now attempted in the junior high school should be organized upon a secondary- as distinguished from an elementary-school level.
4. That these changes may be brought about through increased teaching efficiency, through the elimination of duplicate courses in college and secondary curriculums, through a thorough reorganization of curriculum content, making it more definitely functional.
5. That these reforms may result not only in the saving of two years of time for the student and two years of expense for the community but that this may be done without serious loss.

The specific nature of the experiment authorized by the North Central Association of Colleges and Secondary Schools is indicated

by the following chart which indicates the general nature of the course and the number of such courses planned for each year:

Type of Courses	Number of Courses
Freshman Year:	
Science orientation required	1
Social or political-science orientation required	1
Humanities orientation required	1
Vocational orientation	1
Elective and terminal	2
Sophomore Year:	
Prerequisite required	1
Required	2
Electives and terminal	3
Junior Year:	
Prerequisite required	1
Required	1
Elective and terminal	4
Senior Year:	
Prerequisite required	1
Elective and terminal	5

It will be observed that four out of a possible five subjects offered in the freshman year are designated as orientation courses. The purpose of this organization is to give the student at the beginning of his college course a comprehensive view of the entire field of human knowledge and at the same time to give him a mastery of the particular set of tools that he may need to use in his own field of endeavor. The completion of the courses as outlined brings the student not only to the door of the professional school, but it also provides him with a cultural and informational background needed by the ordinary citizen in the solution of his life problems and gives him the training needed for the semi-skilled trades and professions. A more detailed study of the proposed curriculum will probably make its ultimate objectives more intelligible.

FRESHMAN YEAR—

Science.—This is a comprehensive view of the entire field of science in its relationship to human progress and human welfare. It is neither geography nor geology, botany nor zoology, physics nor chemistry, but rather an overview of them all. It is designed to render more intelligible the work that a student may later undertake in any specific field of science.

Social and political science.—This course is designed to give the student an overview of the interrelationships of human beings and their activities, both constructive and destructive, which history has recorded as the results of such interrelationships. It serves definitely as a background for a later intensive study of the records of family, community, and racial life, together with the institutions that have developed as a direct result of the operation of social and economic forces.

Humanities.—This term is used to describe those fields of experience which represent the fullest expression of human emotions: literature, including drama; music, including poetry; art, including sculpture, painting, architecture, and forms of applied art; and religion, including philosophy and ethics. It is not the purpose of this course to enter intensively into any one field of culture, but rather through an overview of them all to give a broad cultural background by means of which a student will be able, in later courses, to evaluate specific fields of knowledge.

Vocations.—The primary function of this course is to render the choice of a profession or of a vocation more intelligible. It is designed to acquaint the student not only with the nature of the professions, trades, and industries, but also with the possibilities for service in the various fields, the peculiar personal qualities needed for the successful handling of problems, and the course of study necessary for its pursuit.

Suppose, for instance, that medicine has been selected as one of the major professions to which attention is to be directed. The student is first made aware of its position among the learned professions. He is given a comprehensive view of its history and its contributions to human welfare and happiness. His attention is directed to each of its major fields for specialization, the qualities needed for success, the peculiar courses of study to be pursued, the rewards both social and economic which may reasonably be expected. A study as complete as may be is then made as to the present and probable immediate future supply and demand in that particular field. Such a study may show, for instance, a surplus in the field of surgery but a serious deficiency in general practitioners. Before completing his course, the student is encouraged to select from each major field those professions for which he seems to possess most aptitude, and from those the one or ones that seem to offer greatest opportunities. This latter choice determines very largely the type of course that he is to pursue during the remaining three years. This course is offered only in the freshman year.

Terminal subjects.—Whatever field a student may elect for his major or for his minor work, the mastery of certain subjects that will be vital for practical or for economic efficiency in that particular field is necessary. Since these subjects are merely tools in specific fields of learning, they are designated as terminal subjects. In this group will fall applied mathematics, a reading knowledge of a foreign language, English composition, shorthand, typewriting, accounting, the technique of applied music, semi- and pre-professional courses having as their objective—wholly or in part—the economic independence of the student.

SOPHOMORE YEAR—

It will be noted that the student is required during the sophomore year to elect courses from each of the three major fields covered by the orientation courses of his freshman year. These selections are determined by the student's natural interests and ability and are designed to make possible the selection of both major and minor fields of work at the close of the sophomore year. Each department is required to introduce the student to a specific field of knowledge through a survey unit in that field; for instance, if a student elects chemistry as his subject in the field of science, he is given a survey course covering this entire field and introducing him not only to the fundamental forces operating in the field of chemistry, but likewise to the contribution chemistry has made to civilization. This survey unit may cover a few days or a few weeks at the beginning or at any point within the course, but in any case its immediate objective is to render more intelligible the work of the student in the classroom and in the laboratory. A similar course with the same objectives introduces and is an integral part of each basic subject in the curriculum.

In the field of the terminal subjects the objective is a mastery of the particular tool needed. A qualitative and a quantitative standard is maintained but without the usual artificial time measurement; for instance, the objective in the mastery of a foreign language as a terminal subject is an easy reading knowledge of that language. The normal time limit for that mastery is two years. The objective in the course, however, is not two years, but the mastery of a reading knowledge of the language, whether it be done in three months or whether it require three years.

JUNIOR YEAR—

At the beginning of his junior year the student selects both his major and his minor fields. The former is based upon definite prerequisites, the latter is free electives within the field of his minor.

SENIOR YEAR—

The only general requirement in the senior year is the continuation of work in the student's major field, which is designed not only to lead to an intelligent understanding of at least one field of human effort, but also to prepare the student for more intelligent work in a professional school. No attempt has yet been made to evaluate these required courses in terms of hours. It is entirely probable that some of the work indicated, particularly the orientation courses of the freshman year, should be offered in the lower secondary field. In any case, ample time is afforded in the above organization for the mastery of the technique required in some one semi-professional field.

The junior or liberal-arts college should mark the close of the period of general education. Leaving its doors, the student should possess those elements of culture needed for personal satisfaction as well as for intelligent participation in home and community life. He should be prepared for further study in the graduate or professional school of his choice. Through the mastery of its basic techniques, he should have become economically independent in some special field, or fields, of his own selection. Upon the completion of this course, the student should receive the baccalaureate degree. It will be quite evident that the administrative objective of this experiment is the completion of the present junior college in twelve and the liberal-arts college in fourteen years, the administrative prerequisite being a four-year secondary resting upon a six-year elementary unit.

Reaching the College Student

GEORGE W. RIGHTMIRE[1]

THE FIRST thought in this summary is the size of the class sections. Various arguments have been produced on this point, but it is believed that the normal section should not have more than twenty-five students. The University of Minnesota has been conducting a series of experiments with large sections cared for by an able lecturer, and the results obtained from such sections and from smaller sections, where class discussion goes on by examinations, show an equally high ranking for the students in the lecture sections. Even if it should turn out that the progress in the course, so far as that can be shown by marks, is the same in the large sections, yet, there remains the question of the intimate contact between teacher and student which is possible in the small sections. Possibly much of the

[1] President, Ohio State University.

efficiency of our teaching is not all subject to measuring by grades. The discussion going back and forth in the small class sections develops methods of thought and expression and atmosphere which the large sections cannot realize.

The second matter to be thought of is the quality of the teacher. Clearly, much must be done to prepare the teacher for college teaching before he comes, and much should be done after he comes with the younger teacher. A Ph.D. degree is not per se a qualification for teaching, and graduate schools should provide courses in educational psychology, principles of education, and school administration for doctorate candidates who are expecting to teach. There are today many unskilled teachers in our institutions of higher learning, partly for the reason that money has been lacking to obtain uniformly high-grade teachers, and partly for the reason that they were not in the market. Much competition exists for the supply of high-grade teachers among institutions of higher education.

The question of teaching is most acute with the Freshmen, and various plans or procedures are being instituted and others are being considered for the improvement of the contact in this area. The Freshman Week is by this time a well-known procedure, and its purposes and expected accomplishments have been frequently discussed in the past few years.

Another method of reaching the student is through the intelligence test, and this is also well known in our procedure. The placement test is also of great use in distributing the students into class sections with some reference to native ability. A reading test is also given Freshmen and this has disclosed a large number of students who are defective. At the Ohio State University, a professor in the Department of Psychology has prepared a reading manual, graded, and providing exercises which will test and tend to improve quickness in reading and physical processes called into action by reading silently, which will cultivate the ability to make an abstract statement of the contents of the printed page, and which will put the student into contact with a variety of devices calculated to improve the character and speed of his understanding of printed matter.

The personnel blank submitted to freshman students is being used more and more extensively, and the information derived from this blank enables the teacher to get more quickly into touch with the mental operations and the equipment and the background of the student. Personal conferences between student and instructor are also greatly encouraged, and in these conferences discussion will be focused upon the studies the student is pursuing, his methods of

approach, his progress, his social activities, and questions which are troubling him concerning his life as a student—all of these come to the front in a conference where student and teacher meet privately on the same level. This is really a teaching procedure and is worth encouraging, ad libitum.

In the Ohio State University, in five large colleges—Agriculture, Liberal Arts, Education, Commerce and Administration, and Engineering—a new official, called a junior dean, is functioning this year for the first time; his chief work is to get into the most intimate contact with the freshman students, study the matter of orienting the college student with his college work and student activities and the life of the University, and counsel with him in many matters which will crop out in these meetings with the individual student. The junior dean will also establish relationships with the high schools and with the teachers of Freshmen and will aid in setting up procedures in the freshman-class sections whereby the teacher and the student may become better acquainted and the student progressively developed for the college work. This is a large area with which we are experimenting.

Much attention is now being paid in college to careers which students may learn about and may shape their college studies towards and which, therefore, ordinarily are vocational in their nature. Possibilities of this, that, and the other career are presented to the student for his advice in plotting his scholastic activities. Finally, the dean of women and the dean of men in the present-day college and university are vital forces in dealing with the students in social matters, student activities, attitudes, and the whole matter of the life of the student. The officials are in close relationship with college teachers and deans and other officers. The maladjusted student, too, is now coming in for skillful psychological attention, and much can be accomplished in that area by teachers who have the proper temperament and the appropriate training.

It is evident that the subject of teaching and personal dealings with students on the part of the faculty are being given more serious attention in American colleges now than ever before. The atmosphere in this region is showing agreeable change and improvement, and out of the discussions and the proposals and the policies will, in a few years, come an educational process and a grade of teaching which will go far to justify education as carried on in our institutions of higher learning. Especially must the large university be exceedingly inquisitive, active, and sympathetic in this region of work. The large university can organize itself, if it has the money, to give a very

high degree of personal attention to the student in connection with his study and his social activities, and this is not only desirable but it is absolutely indispensable in any proper educational scheme.

The Antioch Adventure

ARTHUR E. MORGAN[1]

LAST night Dean Haggerty outlined the major essentials of a good college teacher. They are, first, a knowledge of his subject; second, ability to teach that subject; and third, personality. If a teacher is great in any one of these qualities we can largely forgive mediocrity in the others. Yet, a minimum of each of these qualities is essential. One of the most skillful teachers I ever knew had also a wide knowledge of his subject, yet his personality was so extremely erratic and unreliable that he failed in every teaching position. We all would agree that no matter how skillful a teacher may be, and no matter how fine a personality he may have, unless he knows something of his subject he cannot be a great teacher.

As a rule, there is no reason why exceptional excellence in one quality must be associated with mediocrity in all others. If a man has exceptional skill in pedagogy, there generally is no reason, except laziness, why he need limit himself to a rudimentary knowledge of his subject. Aggasiz became an epochal teacher by adding to a fine personality, a broad mastery of his field, and exceptional skill in teaching.

The ideal preparation for a teacher would be that in which his special abilities would be developed to their full possibilities, while at the same time other factors of preparation are carried to such a point that they effectively support the outstanding qualities, and to whatever degree is feasible, add to the excellence of the whole. Attention would be given to his particular genius, because through that his greatest contribution can be made. Attention would be given to his weakest traits, because unless they are brought up to a minimum of effectiveness they may wreck the whole. Attention would be given to intermediate traits, because they can enormously strengthen and supplement both strong and weak points. Always the chief aim will be, not to develop weak spots or emphasize strong points, but rather to insure the greatest total of his value as a teacher.

This statement of teacher training is so obvious that you are inclined to counter with the remark, "He says an undisputed thing in such a solemn way." Yet the chief defect of higher education

[1] President, Antioch College.

today is the very general tendency to deny the principles I have implied. In the development of every young man or woman our chief concern should not be the full development of peculiar genius, neither should it be the overcoming of weaknesses, nor should we try to develop a dead level of uniformity. In every case our controlling aim should be the greatest total value of life as a whole. Higher education accepts this principle in the abstract, but often denies it in the concrete. The central purpose of Antioch is to design and administer a program that will result in the greatest total value of life as a whole.

We recognize the necessity of developing the peculiar genius of each student, even when that genius is faint and difficult to find, and so we require that not less than a third of the student's college courses shall be in a "field of concentration." We believe that a minimum acquaintance with many fields of universal concern will stabilize and enlarge personality and outlook and support the special ability. So we require of each student a substantial introduction to English and literature, history and economics, the physical, mathematical, and biological sciences, philosophy, and aesthetics. We believe that physical fitness is an essential foundation for living, and so we give unusual care to health and physical development. We believe that personal development is essential to effective living, and we believe that effective adjustment to life is no less important. To secure elements of development somewhat beyond the reach of academic teaching we arrange that about half of each student's time will be spent in practical affairs away from the college in situations very carefully selected for their educational value. The students alternate between academic and practical work in five- or ten-week intervals.

We believe that variety of experience is educational within as well as without the college and that, as Dean Haggerty has remarked, "A college faculty should consist of all varieties of men who live life greatly." Variety of method and outlook and the desire to live life greatly are the outstanding characteristics of the Antioch faculty. Such an institution will be alive with experiment, impatience, and a spirit of exploration. Time does not permit even a catalogue of the ways in which the Antioch faculty is weighing, testing, and exploring. That spirit passes on to the student body and is one of the substantial contributions in a time when the capacity to adjust to a quickly changing environment is one of the chief demands of life.

High-School Principals

The Principal as Prophet

J. L. Morrill[1]

Not too many but too few people are going to college nowadays, despite the fact that college enrollments in America have doubled in every decade since 1870 and the still more striking fact that college attendance in Ohio has increased 144 percent within ten years as compared with a total population gain of only 21 percent.

Those alert to present-day democratic social aims in education are concerned on three counts: (1) that many thousands of capable and promising young men and women are failing to continue their educational careers beyond secondary schooling; (2) that other thousands whose abilities are not equal to their hopes are suffering disappointment, discouragement, and loss of confidence in after-life because of failure in college careers; and (3) that the colleges themselves are handicapped by their own failure to conceive and to practice an adequate philosophy of education in terms of growth and individual differences; and in the absence of an effective pre-college guidance program which might bear upon the two first-named factors. The criteria for such a guidance program in the elementary and secondary schools are in the making but still lack, at least in Ohio, general application.

On the basis of recent studies and researches and the experience of the Ohio State University in dealing with its Freshmen, the University is now asking the co-operation of high-school principals in Ohio. The details of this program spring largely from the University's contact with the Freshmen as individuals, more thorough than ever before, through five new first-year advisors called the "junior deans." In the suggested scheme which is summarized in a pamphlet entitled *A Suggested Program of Pre-College Guidance* these points are stressed:

1. Advice to high-school pupils and their parents as to probable success or failure in college, based upon recommended intelligence testing of all Seniors in the school.
2. The averaging of the high-school marks of all Seniors, so as to reveal to each one where he stands in the distribution of averaged marks.

[1] Ohio State University.

3. The determination of the grades and the number of courses failed in both the elementary and high school by any pupils and the discovery of the reasons for such failures, so as to reveal to the pupil any special weakness or incapacities and to the principal any evidence of retardation.
4. The giving of at least one assembly talk on "Going to College" or "College and Career."
5. The setting up in the high-school library of a special shelf of recommended books on college, occupations, professions, and vocational self-guidance.
6. The scheduling of at least one interview with each Senior and his parents in which the pupil's purposes, problems, abilities, or lack of abilities may be discussed in the light of the facts just mentioned. Information may be given concerning college-entrance requirements, choice of courses, the influence of outside activities upon scholarship, the budgeting of time for adequate study with relation to intelligence, opportunities, self-help, and the like.

The special bulletin from the University, which contains these suggestions, will be distributed to interested high-school principals in the hope that the University may enlist their co-operation in suggesting additions, deletions, or revisions and in putting into effect this year, if possible, whatever phases of the suggested program seem wise and feasible.

State-wide intelligence testing of all high-school Seniors is the crux of the program, and the Ohio College Association Intelligence Tests are specially recommended for this purpose because they have a validity coefficient of .55 to .60 in predicting freshman performance in liberal-arts courses; they have been used by more than fifty Ohio colleges and teacher-training institutions for three years, so that reliable norms are available for comparing a high-school pupil with college Freshmen, and the test is standard for all pupils intending to enter the teacher-training institutions of the state. In this connection, it may be noted that the State of Wisconsin has just ordered eighteen thousand of the Ohio College Association Intelligence Tests for use in examining all high-school Seniors in Wisconsin this spring.

The bulletin outlining the proposed pre-college guidance program, although prepared with special reference to conditions at the Ohio State University, is nevertheless intended to be useful to high-school principals in advising with all pupils, regardless of their choice among colleges. The University officials have been encouraged and assisted in its preparation by committees of both the State Department of Education and the Ohio College Association.

The Meaning of Secondary Education

W. J. Osburn[1]

One of the important functions of the Educational Conferences is to provide different points of view. If such is the case, it seems that I am destined to contribute my part, at least in a small measure. The speaker whom you have just heard has told you that no one knows what secondary education is and has implied that no one needs to know. Recognizing the high esteem in which this speaker's opinion is held, it is with a feeling of trepidation that I arise to present to you an address on the meaning of secondary education.

There has been considerable discussion in recent years as to whether or not we should attempt to measure something before we know what that something is. When the professional test-maker meets with this sort of controversy, he usually replies that measurement must always apply more or less to elements of subject-matter that are not clearly defined. If we are to postpone all measurement until we know finally and definitely all of the marks and characteristics of that which we are to measure, we shall never get any measuring done.

I want to subscribe to this argument of the test-maker, but I should like to point out the fact that a knowledge of what one is measuring never does any harm. In fact, it always does good. Standard tests, as we know them, originated in elementary-school subjects in which the nature and character of the thing to be measured is rather definitely known. We all know what we mean when we talk about ability in handwriting, in spelling, and in the fundamentals of arithmetic, but we are not at all sure of understanding each other when we talk about ability in geography, history, and biology. Largely as a result of this, standard tests in these subjects have been considerably slower in their development. In general, the secondary-school subjects are less definite in character than the elementary subjects. In fact, as the previous speaker has told you, the whole question of the meaning of secondary education is considerably uncertain.

When the demand for tests in secondary education arose, the test-makers, not knowing what else to do, assumed that tests in secondary education should be just like those for the elementary field. Standard tests were often constructed by persons who knew very little about the meaning of secondary education. It was assumed that, for purposes of test construction, elementary and secondary

[1] Ohio State University and State Department of Education.

education are much the same. The result is a large number of tests in the secondary field built according to the elementary-school type of test procedure. All of this is more or less open to question. Are we justified in assuming that the high school is merely more of the elementary school? Or shall we assume that the function of secondary education differs in some essential way from that of elementary schooling and that this difference is significant enough to merit recognition by those who are constructing our high-school tests.

Matters are still further complicated by another controversy. Shall we make our standard tests correspond to what is taught or with what we think ought to be taught? The tendency has been

TABLE I

THE FREQUENCY OF DIFFERENT TYPES OF THOUGHT QUESTIONS IN AN ELEMENTARY AND SECONDARY TEXTBOOK IN UNITED STATES HISTORY AS USED IN ONE ENTIRE STATE

Type of Question	Text A	Text B	Difference
(1)	(2)	(3)	(4)
1. Comparison.....	11	35	24
2. Cause-effect.....	185	194	9
3. Criticism.....	0	1	1
4. Effect-cause.....	212	232	20
5. Evidence.....	1	8	7
6. Manner.....	43	110	67
7. Hypothesis.....	4	16	12
8. Summarization..	64	106	42
9. Tracing.....	1	1	0
Total.....	521	703	182

rather in the latter direction so that many standard tests in the secondary field involve elements which the pupils have not had in the particular textbook that they are using. All of these things tend to retard the development and wide use of better tests in secondary education. There are many capable people who say that the tests as now published scarcely measure the significant values of secondary education at all. The tests include a large number of facts which may or may not have been memorized, but the "living vibrant content" of secondary education is not touched at all. That seems to be the meaning of those who talk about the inadequate "nut tests in the high school."

For these reasons it seems necessary that the users and makers of secondary-educational tests and measurements come to some sort of agreement as to the meaning of secondary education. The question has been studied rather carefully by Koos in his book on the junior

college. Koos finds much overlapping of function between the elementary and secondary school and between the secondary school and the college. The one function that belongs most entirely to secondary education is that of acquainting the pupil with the best that has been thought and known in the past. The memorization of facts is a mere side issue which should be gotten through with as quickly as possible. The main purpose is to get acquainted with the best thought and ideals of those who have gone before. In the terms of Froebelian doctrine, it is the realization of race experience as it exists in thoughts and ideals. When secondary education is defined in such terms as these, it is at once evident that the present four-year high-school course of study is only a part of secondary education. The mastery of thoughts and ideals begins more or less consistently in the seventh grade and continues through the fourteenth. The field of secondary education is that of the junior high school, the senior high school, and the junior college.

As soon as we realize that these three institutions have approximately the same major function, we begin to wonder why we repeat some of the subject-matter so much. The history of the United States, for example, is taught three times during these grades. It is required in the eighth and twelfth grades and may be taken again in the fourteenth grade. The amount of the duplication in these repetitions of United States history has been subjected to careful study,[2] but the results cannot be given in detail here. Our purpose now is to consider the thought and emotional content of United States history as actually taught in one state as a possible content for better tests of United States history on the secondary level.

The method which is used in this investigation has been described and evaluated in detail elsewhere. Here it will be given in brief form only. Two textbooks were studied. One of the books was used by an entire state as basal text for the eighth grade. The other was used by the same state as basal text in the twelfth grade. Each of the books was carefully read. Whenever a paragraph or sentence contained thought content, the question was noted to which the content of the paragraph or sentence was the answer. All material of factual content was ignored. The questions naturally differed in form to correspond with the type of thought material that the authors of the textbooks were portraying. Each textbook was read in this manner, and all thought material was thus recorded. All of the questions are contained in nine types or kinds; comparison, cause-

[2] Osburn, W. J. *Overlapping and Omissions in Our Courses of Study*. Bloomington, Illinois: Public School Publishing Company, 1928. 167 pp.

effect relations, criticism, effect-cause relations, evidence, manner, hypothesis, summarization, and tracing. Samples of each type of question are:

1. Comparison—
   Compare the attitude of the North and South toward nationalism (1860)
2. Cause-effect—
   What were the results of King Philip's War?
   What was the significance of the Mayflower Compact?
   What was the purpose of the Navigation Laws?
   What were the effects of the Spanish-American War?
3. Criticism—
   Criticize Grenville's plan relating to the American colonists.
4. Effect-cause—
   Why did the colonists fear to provide for a national president in the Constitution?
   What was the cause of the Great Awakening?
   What geographical conditions led the northern colonies to oppose the king of England in 1642?
   What is the origin of the name America?
5. Evidence—
   What is the evidence concerning the character of John Smith?
6. Manner—
   How did Boston treat the Quaker missionaries?
   In what way only could Virginia be made a free colony?
   By what means had Spain become a world empire? (Sixteenth century)
7. Hypothesis—
   What might have happened if the English Catholics had responded to King Philip's appeal (1588)?
8. Summarization—
   Summarize the arguments concerning the admission of Texas into the Union.
9. Tracing—
   Trace the growth of woman's suffrage.

Table I shows the character of the types of questions in each textbook and the frequency of recurrence of each type. Text A is the eighth text. Text B is used in the high school. The figures in

this table clearly support the contention that the work of Grades VIII and XII is essentially secondary in both cases. The same thought material is taught twice with more or less difference in point of view.

Standard tests are needed to measure results in this essential portion of secondary education, but since the present tests are based upon elementary models, they are largely inapplicable. Studies similar to this analysis of history textbooks should be carried on with each high-school subject. Until this is done we cannot claim to have genuinely valid measures in secondary education.

The Social Challenge of the High School

John W. Withers[1]

In a consideration of this topic, two questions must be answered: first, what is the social challenge to the American high school and, second, how well is that challenge being met. The nature of this challenge cannot be well understood apart from careful consideration of certain forces and influences that have been and are now at work in American life and education. The public high school of the United States is today what it is largely because of the influence of two ideals that have profoundly influenced education in general. The first of these is the ideal of scholarship, of learning, culture, and erudition, of pure science, and of knowledge for its own sake. This ideal originated in Europe and was introduced into American education through our early colleges and universities. The second ideal grew out of the essential principles of democracy as these were understood and practiced in the early development of the American republic. It therefore naturally found its first expression at the level of elementary education. It is the ideal of universal education not merely for the benefit of the individual or the class but for the protection and safety of the state and its efficient functioning as a democratically organized society. This ideal places the emphasis not primarily upon knowledge and culture for their own sake but upon these in the sense and to the extent that they minister to a richer and fuller life of the people.

The first ideal gave us originally our colleges and universities and the second our public schools. The first began at the top of the educational ladder and moved downward, and the second at the bottom and moved upward. The two ideals came together in the development of the American secondary school. The college ideal was the first to enter the field of secondary education. In the establishment

[1] Dean of the School of Education, New York University.

of secondary education in the United States the original motive was that of the discovery and preparation of students for satisfactory work in college. To this end the teachers of secondary schools were trained for their work in the colleges. Under college ideals and the influence of the college spirit, they naturally introduced into the secondary schools the ideals of the colleges, their point of view, and their methods of work. The colleges originally had no interest in the preparation of teachers for the public elementary schools. The high school was then strictly a preparatory institution.

As a result of the increasing demand for general popular education, growing out of the rapid development of the American republic, the second or public-school ideal was extended upward into the secondary field and the public high school was established. Since the colleges were the only agencies that could be depended upon to prepare teachers for these public high schools, naturally those who were appointed to teach in them had the same ideals and point of view as those who were responsible for the development of the preparatory schools. Consequently, the original public high school was an almost exact duplication of the private preparatory school.

Obviously such a public high school could not long continue to be satisfactory. The two ideals clashed and they are still more or less in conflict within the work of our public high schools over the United States, constituting a fundamental problem of secondary education. One emphasizes the function of the high schools as an institution for the preparation of students for higher learning in colleges and universities, and the other emphasizes the high school as an institution whose primary purpose is that of preparing adolescent boys and girls with different interests and abilities for the part which they are to play in life, whatever that part may prove to be.

The problem has been greatly intensified by the marvelously rapid growth of the attendance in the public high schools during the last thirty or forty years. For the thirty-year period from 1890 to 1920, while the general population of the country was increasing only 68 percent, enrollment in the public high schools of the United States increased 98.6 percent. There were 1,086 boys and girls in the public high schools at the close of that period for every 100 who enrolled in similar institutions at its beginning. Practically the same rate of growth has been kept up during the period since 1920, so that all over the United States the public high school has become an integral part of our general scheme of common-school education, and young people of all types of interest and ability are finding their way into the classrooms of our high schools.

To meet satisfactorily the diversified interests, needs, and abilities of this great host of adolescents constitutes the social challenge to the public high schools of today. How well is this challenge being met? The quality of education in the secondary schools of America has often been compared in recent years with that of similar schools in Europe, and the products of our schools have been regarded as distinctly inferior to those secured abroad. These criticisms should be carefully considered. There is no doubt that we can gain much from a careful study of secondary education in the nations of Europe. However, the quality of secondary education in America cannot be rightly evaluated without taking into account the recognized objectives by which this process is guided. We cannot with profit compare the products of our secondary schools with those of Europe without duly considering the fact that the objectives of secondary education in Europe and America are essentially different and that this difference affects not only the choice and effective application of the means of education but also the level of general intelligence and the life purposes of the students enrolled in these schools.

The scope and purpose of secondary education has been much more restricted and the place and functions of the secondary school much more clearly and specifically defined in the leading countries of Europe than in the United States. Rightly or wrongly, we have a much broader, more inclusive, and at the same time less clearly defined and more adaptable notion of the scope and function of secondary education in its relation to our community and national life than is true of any of the countries of Europe with which our schools are most frequently compared. This fact alone makes any comparative study of the quality of educational work here and in Europe very difficult and the results of such study almost inevitably controversial and unsatisfactory.

As a result of the marvelous development to which I have referred, the policy and program of secondary education have not as yet been clearly defined. What, in fact, is secondary education as we understand it here in America? Where, in our school system, does secondary education begin? Where does it end? How many and what years of the average school child's life does it cover? For whom is it primarily intended? To what extent is it actually selective? For what does it really prepare, and with what units of our organized system of education is it directly concerned? We all know that both in theory and in practice, taking the United States as a whole, many and various answers have been given and are now being given to these questions. Nationally speaking, we have not yet fully made

up our minds as to what secondary education really is, why it should be organized, whom it should serve, and just what it should be expected to do. This, however, is not so unfortunate as on the surface it seems to be, for in view of the changing character of our supervision and because of the part which public education is increasingly expected to play in our national life, it is fortunate that our conception of the appropriate place and function of secondary education has not thus far become crystallized into any fixed and definite form and that it remains still capable of ready and progressive adaptation.

That in the best thought of today we are approaching a more nearly unanimous opinion in answer to the questions I have asked cannot be doubted. The drift of opinion is definitely and distinctly in the direction of confining elementary education to the first six years of formal instruction and of extending the period of secondary education to eight years, beginning with the seventh grade and closing with the sophomore year in college. As to just how the work of these eight years should be organized, whether on a four-four or a three-three-two or a six-two basis, there is as yet no common agreement, and because of the varying conditions affecting public education it is not likely that such an agreement will very soon, if ever, be reached and universally followed throughout the United States. As defined in the Yearbook of the Department of Superintendence of the National Education Association for 1928, secondary education is[2]

> the organized effort of society through its schools to aid the normal processes of growth and development and to produce desirable changes in the attitudes, ideals, and behavior of youth during the period of early and middle adolescence. . . . The changes already set up by society, or in process of being set up, in order to afford secondary education of the character contemplated in this report are the junior high school, the senior high school, the junior college, and several types of trade, industrial, vocational, commercial, and continuation schools.

Analysis of the nation-wide movement in secondary education which this definition attempts to summarize reveals clearly the influence of the two ideals to which I have already referred. The influence of the first ideal has been strongly conservative and insistent upon a relatively fixed and constant conception of what our secondary schools should endeavor to do. Our colleges and universities have always emphasized for secondary education the importance of academic knowledge, the ideals of scholarship and of culture, and the preparation of students for successful work in college. But these

[2] Department of Superintendence, National Education Association. *Sixth Yearbook*. Washington, D. C.: National Education Association, 1928. p. 39.

institutions are less influential today in shaping the total policy and determining the general character of secondary education than they have been at any time in the past. Moreover, colleges and universities everywhere throughout the United States are beginning to subject their own policies and procedures to vigorous critical examination to determine more fully their own proper place in the future development of American education. The probable outcome of this process of self-examination is almost certain to be emphasis on higher rather than lower standards of scholarship required of those secondary students who expect to enter college.

It does not seem likely that the college of the future will be occupied to any great extent with general education. This will increasingly be regarded as the function of a reorganized eight-year period of secondary education. The college will hereafter, in all probability, be the more closely identified with the university and will continue to perform the increasingly important function of serving as a gateway for students who are going on to graduate study and to careers of research and professional service.

The college of the future, though a thoroughly reorganized and reconditioned institution, is not likely to give up the ideal of scholarship to which it has thus far tenaciously held, nor should it be expected to do so, for thorough scholarship will be even more important in the coming time than it is at present. Therefore, two things should be distinctly and increasingly recognized, both by our colleges and by secondary schools in their relation to each other. The reorganized secondary school should not regard itself even primarily as an institution devoted to the preparation of young people for college or university, nor should it be expected that all of its graduates should be entitled to college admission. It has a much larger and more inclusive service to perform. On the other hand, the college has no right to criticise adversely the work of the secondary schools merely because a considerable percentage of those whom they graduate are not well equipped for satisfactory work in college. The secondary school is a selective and distributive as well as an educational institution. Its guidance function is quite as important as its educative function. Its policy is and should continue to be determined more by its relation to life in general than by its relation to college. It should prepare for college and prepare well those of its students who want to go to college, but it should also prepare equally well for the important occupations which the larger group of students will enter—the group comprising those students whose formal education will end with the secondary school.

The quality of American secondary education must be judged by the application of two types of standards, both of which are necessary and neither of which should be exclusively used. In the case of the students who are going to college, the process should be judged by academic standards. In the case of students who are not going to college, standards should be used which will measure the value of their preparation for the occupations which they are about to enter.

Hence, when one compares secondary education in America with that of Europe, he should not overlook the fact that the secondary schools of Europe are highly selective and largely preparatory for college or university in their function. For this reason the first or academic standard may be applied to all the students in such institutions. This is especially true of the secondary schools of such nations as France and Germany. There are not as many students, foreigners included, in the secondary and higher institutions in the whole of France with its forty millions of population as are enrolled in institutions of similar grade in the city of New York.

The tremendous student mortality and the highly selective character of secondary education in France is shown by the facts set forth in an administrative bulletin issued by the minister of public instruction in February, 1927. The results of the final state examination of secondary-school candidates for the baccalaureate who presented themselves in 1925 indicate that out of a total of 21,579 persons examined only 8,905 succeeded in passing. In other words, 41.2 percent of the applicants passed and 58.8 percent failed. In the following October, 11,348 candidates presented themselves and only 4,199 or 37 percent passed. In the face of such enormous eliminations as this, it is pertinent in passing judgment on the educative process to inquire into its actual effect upon those who fail as well as upon those who pass.

The effect of this highly selective method upon those who fail is strikingly shown in Germany where the inability of the students to stand the strain and the actual or anticipated effects of failure frequently result in suicide. It is estimated that during the year 1927, more than 150 students of junior high-school grade committed suicide in Germany. That year measures were taken up by the Prussian minister of education to prevent the heavy toll of student suicide by ordering the abolition, at the urgent request of the people, of the written final examination at the junior high-school level.

The value of the total influence of any educational process that produces results of this kind may well be seriously questioned. The serious and permanent influence of this crushing defeat on those who

have put forth strenuous effort and failed to pass must be taken into the account as well as the superior value of the education received by the much smaller number of those who succeed. Even from a cold-blooded business point of view, the profit to the community in the form of superior service resulting from the financial investment, which the community makes in the education of those who pass, must be discounted by the hundreds of thousands of dollars totally lost on the education of so large a number of suicides occurring each year. On the other hand, the educational value of a form of secondary education which generally results in the joy of living, a consciousness of growth, of achievement and success among the great majority of students is certainly quite worth considering.

In meeting the present challenge of society, the high schools of America will do well to pay attention to this form of achievement as well as to the other. As I have said, the quality of American secondary education must be measured by two types of standards: one to determine the success of the secondary school in preparing students for college; the other to measure its success in preparing students for life occupations and activities outside of college. Strictly speaking, this statement is true only of the results of secondary education as these are evident in the later life of the student. It does not take account of the important values that are immediately realized in the educational process as it actually goes on in the organized life of our best secondary schools. These results also have highly important effects in the subsequent life of the student but they are not such as can be adequately determined by the standards that measure the scholarship required for admission to college.

We may readily admit that as college-preparatory institutions our secondary schools are not as satisfactory as they might be or as they should be. This, however, is largely because of the ineffective exercise of the guidance function. Secondary education as we now have it generally ends with the last year of the senior high school, but the guidance function should not end with the senior high school except for those students who are going into the trades and occupations for which the high school furnishes sufficient preparation. For the guidance of those who are going into professional and semi-professional occupations, the freshman and sophomore years in college are necessary. The present organization and point of view of the traditional four-year college is not well suited to furnish these students with the guidance that they need. For this reason and for the sake of guaranteeing to all students better guidance and more rapid and continuous progress through the whole period of general

education, the desirability of incorporating the present freshman and sophomore years of college as an integral part of secondary education is coming to be increasingly recognized.

As matters now stand, our colleges are too often inclined to treat without exception the high-school graduates who seek to enter the freshman year as if they were all destined for the professions or for the graduate school. College faculties, therefore, usually feel it to be their duty to eliminate so far as possible, either at the time of admission or during the freshman year, all those who appear to be inadequately prepared or mentally incompetent to complete a full college course. Meanwhile, our senior high schools in harmony with their best service to American education are graduating and should continue to graduate students whom they do not consider capable of completing satisfactorily a four-year college course and many of whom they would not recommend to go to college at all. They do not feel, however, that they have not rendered a real service to these students that is worth all that it costs when judged in terms of its influence on their subsequent life and the life of society.

In attempting scientifically to compare the success of secondary education in the United States with that of any other country as to the students who go into higher education, it is obviously necessary to select for such comparison not the average secondary-school graduates who are continuing their education in American colleges, but only those students whose native general intelligence equals that of the secondary-school graduates of the country chosen for such comparison and who have been subjected to the process of education for an equal period of time. It would be difficult but not impossible to carry to completion a study of this kind, the outcome of which would undoubtedly be both stimulating and suggestive.

In an address to the faculty of Yale University on February 22 of last year, President Angell made the following statement:

> In taking stock of current undergraduate conditions, the average man accepted today for the freshman class is much better prepared than at any previous period. He does better work after he gets into Yale. A far smaller proportion of these men is eliminated for academic failures than was formerly the case, and the average of scholarship attainments as far as these can be determined by marks, honors assigned, or any similar criteria, was never higher than it has been in the last few years and is today.

It is probable that the methods of student admission employed at Yale result in the choice of a student body which in general intelligence and native capacity compares favorably with students selected for secondary education by the methods employed in France or Ger-

many. President Angell is therefore convinced that for students of this type, the preparation they have received before coming to Yale is much superior today to what it has been at any time in the past. Granted, someone may say, but the students who are admitted to Yale are trained in private preparatory schools, and President Angell's statement therefore sheds no light whatever upon whether or not there is corresponding improvement in the training given to students of this type in the public secondary schools.

Fortunately, we have information from a careful study recently made in Yale which gives a definite and positive answer to this question so far as Yale is concerned. I refer to the study of Llewellyn T. Spencer.[3] In making this study the records of the four classes of 1923, 1924, 1925, and 1926 in Yale were grouped into four divisions; public-school men, private-school men, men prepared in both public and private schools, and transfers from other colleges. Altogether, the records of 2,663 men were studied. Of these, 642 or approximately 25 percent came from the public schools. Dr. Spencer summarizes his results in the following statement:

> Comparison of the four groups . . . shows that the public school group is superior to the private school group in intelligence-test scores, academic grades, frequency of graduation, and freedom from resignations. The mixed group, for the most part, occupies an intermediate position. The private school men, however, surpass the public school men in entrance examination grades. The transfers are the least successful of the four groups in all respects studied.[4]

Elsewhere in the report Dr. Spencer states that the private-school men show somewhat greater indulgence in athletics and social activities outside of the curriculum but that this is offset by the fact that a far larger proportion of public-school men were partially or wholly self-supporting while in Yale. It would be interesting to determine by a series of similar investigations how far this experience at Yale is also characteristic of other colleges and universities in the case of those students whose average intelligence quotient is equal to that of the students at Yale. Such studies would be very profitable and should certainly be made.

Let us now devote a few moments to another powerful social demand that has had great influence upon the development of the American high school. I refer to the combined influence of those central tendencies of thought and behavior that are distinguishing

[3] Spencer, Llewellyn, T. "College Achievement of Public and Private School Entrants," *School and Society*, 26:436, October 1, 1927.

[4] *Ibid.*, p. 438.

characteristics of American civilization and that are increasingly shaping the policy, determining the organization, and promoting the enormously rapid growth of both secondary and higher education: first, a profound faith in science and scientific method and the desire to extend the bounds of tested knowledge in every field of human interest and activity; second, the disposition to apply the results of scientific research immediately and effectively in every possible direction in which conceivably they may be of service to the people; third, a marked emphasis upon specialization of function in activity and service, the development of experts, technicians, specialists for every kind of occupation requiring technical or professional skill and ability; and fourth, extension of the principle of democracy and the right to self-expression and self-direction to include every member of American society, male or female, young or old.

It is impossible to emphasize too strongly the significance of the last tendency and its profound and increasing influence upon education, especially upon the public secondary school as a social institution. The principles and responsibilities of democracy, at first confined in their fullest expression to the adult white male population over twenty-one years of age, have been gradually extended in the course of our national history to include first adult negro men over twenty-one, then adult women over twenty-one, until today these privileges and responsibilities are being extended to children of adolescent and even pre-adolescent age to an extent hitherto unknown in the history of the world. We are considering our children individually and collectively, in school and out of school, as personal free agents with the right to self-determination and self-expression in a manner and to a degree never dreamed of in the days of our fathers.

It is certainly not hard to see that in this universal application of the principles of democracy we have one of the most interesting and at the same time one of the most difficult and critically important problems of education. It is, in fact, the supreme test of democracy as we conceive it here in America. In its proper and ultimate solution no part of our whole scheme of education is more deeply involved than our secondary schools. To judge the results of these schools or attempt to measure the values of American secondary education without full consideration of this fact would be to indulge in folly that is almost criminal. It is certainly quite as important to ascertain how well secondary education is meeting its responsibility in this direction as to discover its degree of success or failure in the preparation of young people for college. Indeed, in the inevitable reorganization of collegiate education that is already under way, the

time is coming, apparently, when these two responsibilities of secondary education will be much more nearly identical than they are today.

In carrying on American life in accordance with the tendencies to which I have referred, three types of superior ability must be recognized and cultivated through education. One of these is ability in abstract thinking and in dealing effectively with symbolic materials of various sorts such as language, mathematics, logic, etc. This type of ability succeeds well in the ordinary college and in the higher professions. It is a very important type and should be carefully developed. To the education of this type our colleges and universities have already given very careful attention.

The second type is the ability to deal effectively with problems in which the important factors are physical facts, sources, and conditions. This type is often not interested in abstract or symbolic thinking or book reading. Its members, however, are exceedingly important in a country in which industrial production is a prominent feature of the life of the people. This type furnishes us with our inventive geniuses in the fields of industry. It is highly important in our scheme of education that it should be carefully considered, its educational needs provided for, its growth insured and its development properly guided.

The third type is made up of those who show superior ability and interest in dealing with problems in which the chief problematic factors are human relationships and human adjustments. From this type material for effective leadership in large co-operative undertakings and, in general, democratic living must be recruited. All of these types are now finding their way into the high schools of the country, and their proper education is one of the community's greatest challenges to the modern high school.

JOINT MEETING WITH
JUNIOR HIGH-SCHOOL PRINCIPALS

Advantages of the Six-Year High School

CHARLES H. LAKE[1]

IN the years that have elapsed since the problem of a reorganization of our public-school system was first raised, we have had a number of types of organization of secondary schools by years; two of the more recent types are the six-year school, comprising Grades VII

[1] First Assistant Superintendent of Schools, Cleveland.

to XII, and the three-three division of these grades. The questions at issue are: Is there a place for both types of organization consistent with the educational interests of the pupils? Is one of these types so much better than the other that it should become the predominant type of organization for these grades?

With school systems which enroll fewer than five hundred pupils in the upper six grades, there are real economic and real educational advantages to be derived from the six-year plan of organization. There is a saving in expense in buildings, equipment, and general administration. It makes possible an enriched program of studies and a wider range of extra-curricular activities. It fosters the employment of better-trained teachers. It permits better instructional supervision and it centers responsibility over larger units of work.

Probably no type of organization in itself is going to solve all the problems of education which fall in this range. Standardized organization does make an administrator's work easier, but it is not at all certain that it makes it uniformly and continuously better. A good principal who is interested in educational problems, in all probability, will do very well with either type.

In the smaller cities, one building housing all six grades apparently is the solution. There seems to be no reason why six-year schools cannot be conducted so that all pupils will have all the advantages which pertain to the segregated types of schools at less cost to the taxpayer. To realize this, it is necessary that the principal and the faculty of the school be actively sympathetic with this type of organization. The best organization of six years in one building is as a unit and not as two separate organizations—three years in one and three years in the other. Such an organization will operate best if there is but one salary schedule and all teachers are working on the same basis.

In the large city, the advantages and disadvantages as listed by those who have made some study of the problem seem to be about equal when we take into consideration statements made by both proponents and opponents. However, a careful analysis indicates that it is rather difficult to tell why some of the so-called advantages might not be classified as disadvantages and likewise why many of the disadvantages might not be classified by others as real advantages.

The advantages which seem to merit most consideration are:

Advantages to the taxpayer—

1. Saving through the operation of one school instead of two, with one administrative organization
2. Saving on the maintenance of one building instead of two or more

Advantages for the school administration—

1. In providing for greater elasticity in program-planning
2. In giving the organization effective resiliency
3. In making possible the conservation of time and effort of the teaching staff
4. In facilitating the adjustment of fractional programs between grades

Advantages for guidance—

1. Providing continuity in the program
2. Making possible a more intimate understanding of the individual pupils and his needs
3. Permitting the continuous observation of the behavior of the pupil by the same staff of workers during the period of adolescence in the junior high school and in the more mature period in the senior high school
4. Assuring a continuous follow-up of problem pupils
5. Eliminating repetition and duplication of guidance activities in the junior and senior high school
6. Providing unified objectives by enabling the counselor to check the pupil's educational trend at the end of each semester during the exploratory period with the senior-school curriculum qualifications in mind

Advantages to the pupil—

1. Making necessary but one orientation adjustment, the one when he enters the building
2. Eliminating the articulation problem between Grades IX and X, thus conserving the time and energy of the pupil
3. Permitting a better selection of subject-matter for early-leaving pupils and for those who remain

Many of the questions that center about these problems, it seems to me, would yield easily to research. With a considerable degree of accuracy we can discover the comparative costs, the progress rates of pupils, the articulation losses, the relative cost and effectiveness of guidance, and the solutions to other similar problems. It may be well for us to withhold our final decision on these questions until some of these studies are completed. It seems quite possible that the six-year school of the future will not be regarded as a sort of necessary evil, which is imposed by the demands of housing conditions and which will be eliminated as soon as possible. In summing up the arguments which have been presented here, it seems pertinent to ask ourselves whether the six-year school has not offered a unique opportunity in educational organization and whether the conditions under which it has been operated have been arranged in such a manner as to afford it the fair opportunity for the success in the community which it rightly deserves.

Advantages of the Three-three High School

Edward D. Roberts[1]

Educational reorganizations which arise from time to time, as administrative expedients to care for the immediate situations, tend to become justified ultimately on the ground of meeting educational needs or exemplifying educational principles. Among such is the junior high school, which began in various sections of the country as a means of dealing with crowded building situations, and is now justified almost entirely upon the ground of its satisfying educational principles. Such an authority as Koos, in his book *The Junior High School*, in considering "The Peculiar Functions of the Junior High School" places "relieving the building situation" almost at the foot of the list of fifteen different items.[2]

The junior high school is now obliged to justify itself upon the ground of educational service and educational efficiency. Involved in such consideration, however, are financial factors which will determine largely for the cities of the country whether the secondary educational organization is to be carried on under a six-year or three-three form. Whatever decision is reached will undoubtedly tend to be justified finally in terms of costs. Consequently, one may concede the probability of the spread of the six-year secondary organization and raise questions definitely, then, as to the losses that may occur, especially in the junior high-school field, through this form of organization. It is these possible losses that are dealt with specifically in the remainder of this paper. The considerations are based upon the peculiar functions of the junior high school as outlined by Koos in the volume already referred to.

Realizing a democratic school system through such factors as retention of pupils; economy of time; recognition of individual differences; exploration and guidance; and beginnings of vocational education would seem to be potentially aided by the change from the three-three to the six-year school, in that the longer period school may hold pupils through a longer number of years with a more probable economy of time than two shorter units could do. However, since the six-year unit will probably be largely dominated by the longer established senior high-school section, the outcome may not be as positive as one might expect. Homogeneous grouping and the exploratory significance of school subjects and programs are not so

[1] Associate Superintendent of Schools, Cincinnati.

[2] Koos, Leonard V. *The Junior High School*. Boston: Ginn and Company, 192-. pp. 13-128.

characteristic of senior high schools as of junior high schools. The beginnings of vocational education should not be deferred to the senior high-school grades.

The next item in Koos's list, namely, "recognizing the nature of the child at adolescence," has been definitely characteristic of the junior high-school movement. While one may concede that this function of the junior high school may have a larger place in the senior high-school years, it is probable that the senior high school will be likely to give attention to the older children and consequently somewhat neglect those of the junior high-school years.

The next items, namely, providing the conditions for better teaching, securing sound scholarship, and improving the disciplinary situation and socializing opportunities would not seem to be definitely imperiled under the six-year organization, nor would the remaining functions, namely, continuing the influence of the home, hastening reform in grades above and below, normalizing the size of classes, and relieving teachers.

Finally, there seems every reason to add a word of caution which all those responsible for the organization and administration of secondary-school units should have in mind. If the development in the cities of the country is to result in the amalgamation of the junior and senior high-school units into a six-year school, the two sections, as far as possible, should continue to exist as independent or separate units. Only in this way, it would seem to the writer, can the functions which have justified the development of junior high schools continue to be realized.

At the same time, the functions which belong to the senior high-school grades can better be realized if these grades are held as an entity and considered upon their own account in all matters of administration and organization. This may, and probably will, necessitate the construction of buildings with definitely separated physical sections for the two units of the school. It may mean, and probably will mean, the maintenance of two independent teaching staffs, one group working in the junior high-school grades and the other group in the senior high-school grades. This may, and probably will, mean the organization of two independent administrative units, even though there be one single head, in the principal, of the entire school.

Such units may involve separate assistant principals, deans, counselors, advisors, and the like, for the junior and senior high-school grades. This may, and probably will, necessitate the separate organization of all forms of socializing and extra-curricular activities for the junior and senior high-school grades. Unless the proper

safeguards are put around the six-year secondary school in these and other possible ways in which the interests and educational needs of boys and girls may be properly protected, one may doubt whether any possible justification, even as fundamental as that of cost and the ability of the people to support education and the distribution of items in a school budget, can be found for the modification of the junior high school and senior high school into a six-year school.

History

Correlation of High-School and University History

ARTHUR H. NOYES[1]

CORRELATION between high-school and university work in history is just as essential as it is to establish the same relationship between the work of the stonemason, the bricklayer, and the carpenter in the building of a house. All are laboring to attain a common object. In the past this correlation has not existed between the work of the grades, the high schools—junior and senior—and the colleges, and universities. Today the greatest gap still exists between the work of the senior high schools and that of the freshman year of the university. Here the student still finds the greatest difficulty in progressing from the one to the other.

We are undertaking efforts to correct that. One essential means of correlation is to establish better methods for testing the results of high-school instruction and ascertaining with great accuracy the knowledge of the incoming university Freshman. Ohio State University, through the sincere interest of President Rightmire in freshman problems, is at present creating tests and examinations in several basic subjects. These tests are to be given to new students next fall. Later these may be given to high-school Seniors who contemplate entering college. The results of these will be available to departments in which the Freshmen are enrolled, on the one hand, and to high-school authorities, on the other.

Other means of effective correlation lie in better defining the objectives in history and then deciding the portion of the task of attaining these objects to be performed by the high school and by the college. Professor Krey, chairman of the Committee on Historical Studies in the Schools of the American Historical Association, has published in the February, 1929, number of the *Historical Outlook* the best list of historical objectives yet devised. In my estimation, each of these lends itself to delimitation. That is, high-school teachers of history and college instructors may sit down together and decide just what each will do in aiding the student to reach these respective goals. History does not easily lend itself to this type of correlation, but it can be done.

[1] Ohio State University.

Another method of more effective articulation lies in a better understanding of the character of instruction to be given in high school and college. It should not be alike, obviously, neither should it be contradictory; it should be supplementary. This is not the case all too often. To arrive at this effective relationship we must again have closer contacts between the history staffs of our secondary institutions and those of our colleges and universities. All too often these contacts are now purely negative—criticisms of the work of each other.

We need to meet and adjust our differences, and our students will profit. We need to agree, on one hand, just what type or types of history teaching are best suited as a preparation for the kind of instruction the high-school student will experience when he enters upon his university career; on the other, we need to ascertain just what manner of teaching is best fitted for the freshman history classes as a bridge from high-school to more advanced college work in the historical field.

All of these means to a common end—proper correlation of high-school and university work in history—can only be attained by joint effort through conferences of those responsible for high-school and university freshman history instruction. Such conferences I recommend.

What History Shall We Teach?

J. Montgomery Gambrill[1]

The difficult problems in the teaching of history grow out of an embarrassment of riches. Each of the other social sciences concerns itself with one aspect of human society, but history has for its field the entire life of humanity. In fact, some ambitious students and writers, after the manner of Mr. Wells, include biological and geological history as well, and perhaps some attempt to scan the future. Even the more modest program of the usual historian, however, leaves us with an excess of wealth.

Our courses of study in the past, and in the present for that matter, have been too much based on the principle of telling a little about a great many things. A generation ago, to take a convenient turning point, it was the custom to offer in high schools a course in universal history, which, broadly speaking, traversed rapidly the story of all countries and all times. The Committee of Seven of the

[1] Teachers College, Columbia University.

American Historical Association, making a report at the close of the nineteenth century, attacked this practice. Also, it wrote a program of its own which determined the practice for nearly a generation and is still immensely influential. The four blocks determined upon, however, when adopted in school programs, were seldom followed by all or even by any considerable minority of pupils. One or two or three years might be required or elected, but the program as a whole did not function in practice.

Meantime, there was going on the discussion of what has been commonly referred to as the "new history," a term which of late has incurred some criticism, partly because of extravagances connected with its use and partly because it has been easy to show that the "new" features were not absolutely new but had many precedents as far back as the eighteenth century. I think, however, that there is much justification for the use of the term, because it does emphasize tendencies which have been much further developed and more widely practiced in our generation than at any preceding time. If we undertook to name a leader of that movement, we should by common consent designate James Harvey Robinson. His *History of Western Europe,* which may seem a bit conservative today, was really a pioneer work and marks an epoch in the development of school textbooks. Then followed the new history, emphasizing the social, the economic, and the intellectual factors as opposed to the political and insisting that after all the distinctive characteristic of history as compared with the other social sciences is the fact that it deals with development, that it is genetic, that it reveals the continuity of human affairs. These ideas began to be incorporated in school programs, and other national committees followed the Committee of Seven, making more or less different proposals. But still the discussion goes on. Shall we have ancient history and if so, how much? Shall we teach English history, or let it continue on the way to oblivion? What of the history of Europe? How much attention shall we give to the history of our own nation? And now we have an interesting tendency to introduce a course called "world history," which, however, is too often a reversion to the earlier discredited type.

The idea of presenting a general summary of history prevails despite the sarcasm of Professor Robinson and the attacks of Professor Henry Johnson and others. The tradition is so strong, the ordinary standards so fixed in requirements, that we still think we must give a general summary, an epitome, of whatever large field we choose.

Is there any principle we could adopt that would help us to a better and more reasonable selection as well as in definition of the

larger fields? There has been much discussion of a program based on the conditions and problems of today, which is probably sound if intelligently interpreted, but the "if" is a large one. It is very easy to interpret the principle extravagantly and unreasonably, and, even aside from that risk, difficulties arise regarding choice among the wide range of possibilities. Even more difficult is the problem of achieving a synthesis from the chosen materials that will represent both sound scholarship and good teaching form. Some kind of organization of large units we must have if we are really to break away from the vicious practice of merely teaching one detail after another and to present instead the concepts of continuity and development in human affairs. In fact, if I had to pick out a single oustanding fault in history teaching, after a tour of schoolroom visits which carried me from coast to coast, I would say it is the practice of working along by the question-and-answer method from detail to detail, a practice which never leads to anything and never really gets anywhere. There may be sequence, but there is no real picture of development.

I am not prepared to assert dogmatically what ought to be in the history program of high schools, but there are two major possibilities which concern the history of the world and the history of our own nation. A new world history is needed today because there is a new world community, which came without any planning and regardless of whether anybody wanted it or not. It is here, and we have to live in it. A community, as the word implies, is simply an interdependent group. Through most of recorded history the word "community" has naturally implied a local neighborhood, but there has been an increasing tendency toward the expansion of this local community. Even in ancient times, in the better organized empires such as the Persian and the Roman with their improved means of communication, there was always, with the growth of trade, and intercourse, a tendency for the community to enlarge. The disintegration, economically, socially, and politically, of the Roman Empire was a big set-back, and centuries passed before there was a recovery. There were ups and downs, but the community has remained relatively small until modern times. Expansion of the community has always occurred with better communication and the accompanying growth of commerce and industry. There are a good many other facts, of course, but the general tendency is important.

A world stage in the true sense of the term appeared with the expansion of Europe overseas, beginning in the late fifteenth century and continuing to this day, but reaching a climax in the eighteenth century. Think for a moment of a map of the world laid out be-

fore you. In the center is the western European civilization which we know best, which has influenced us most. At the opening of the fifteenth century, Europe was isolated entirely from the human life of the western world. It has important relations with the civilization of Asia but very few personal contacts and only hazy knowledge. Farther east still are islands and continents of which Europeans knew nothing. The overseas expansion opened the sea roads between all those different parts of the world, rapidly established commercial relations and promoted travel and colonization, setting up a real world stage for the human drama. Even more striking has been the development of the world community in the age of science. The steamship, the railroad, the telegraph, the cable, the radio, the telephone, these new means of transport and communication have rapidly made the whole world a neighborhood. Interdependence within it is growing constantly.

Consider, again, the immense distribution of capital from the richer industrialized countries to all parts of the world, our country alone having many billions of dollars invested abroad with enormous annual increases. The policies of our Federal Reserve System and the interest rate of the Bank of England have their effects throughout the world. International commerce continually grows in range, amount, and complexity. Outside of the economic field, interdependence is similarly apparent. We had nothing to do with the outbreak of the World War, and yet, the assassination of a middle-European Archduke four thousand miles away had a most tremendous effect upon our people and would have had even if we had never become a belligerent. It cost us directly tens of thousands of lives and billions of dollars and indirectly more than anybody can estimate.

We are a part of this world community for good or for evil. The World War might in a real sense be regarded as a "civil war." Terrible penalties were paid by all, victor and vanquished. The extraordinary degree in which we live in an age of integration, with the bonds constantly increasing in intricacy, is a fundamental fact susceptible of illustration and proof by concrete examples. It is, moreover, an age of international publicity, peculiarly an age of propaganda. The science of social psychology is bound to be of increasing importance in our age. World publicity is a reality. Now organization in the world community is still rather limited. What we call international law is largely based on customs or a series of treaties, which are always limited to some extent in their operation. We have a World Court, but under similar limitations. We have important lesser organizations such as the International Postal System. There

are many recognitions, in short, of this world community and many attempts to deal with some of the problems of living in such an interdependent world.

We need the development of a new world history to sketch the rise and growth of this world community. The whole story of community growth should also be included as well as the story of the heritage of the present from the past. Some men have glimpsed that story and clearly defined the theme, a subject which space does not permit me to discuss here but which I have dealt with elsewhere.[2] Here I can merely allude to the fact that within our own time Lord Bryce has written very clearly of the appearance of the world community and the reasons accounting for it, that F. S. Marvin in his brilliantly suggestive little volume, *The Living Past*, clearly stated the idea about the same time Lord Bryce did although independently of him, and that the philosopher Kant spoke of a world community even before the development of the age of science.

This new world history will have for its theme the development of humanity. As Mr. Wells says, it will not give the history of England, plus the history of France, plus the history of Italy, and so on, but it will try to tell something of the story of humanity as humanity. The task is full of practical difficulties. Mr. Wells himself does not go very far in reaching any solution of that problem. His famous *Outline of History* was justly criticized, although the idea is brilliantly stated. He urges us to remember that not only Europe but the Far East is a part of the world. Even the United States is part of the world, though some of us try to forget it at times. The same is true of the rest of the Americas. All have their heritage of institutions and culture from the past and all are a part of this world community which has developed from the past and in which the bonds of interpendence are continually woven more closely together. In this world community certain major lines of development have gone on and are going on, for examples, democracy, nationalism, and imperialism. These are characteristic tendencies as marked and outstanding in the modern age as the rôle of the Christian Church was in the Middle Ages.

What about world history in the schools? There are real possibilities of applying progressive principles in the teaching of history to this new and larger concept of world history which we are beginning to see, but at present I am afraid there is no real world history being taught. I was disappointed several years ago in my travels across the continent, visiting schoolroom after schoolroom where teachers

[2] "The New World History," *Historical Outlook*, 18:265-66. October, 1927.

thought they were progressive to drop out ancient history and to put in a course of "world history," to find that teachers and officials had no concept of the new world history. When I asked them why they made the change, the answer usually was, "We have only one year for history in the commercial course (or some other) and we thought we would cover as much ground as we could." In short, their progress was actually reaction. They were taking material, thin and dry enough when covered in two years, compressing it into one year, and trying to ram the product down the throats of their unlucky youngsters. No wonder that in many schools where the so-called "world history" course has been introduced the results have been disastrous!

Moreover, the so-called world history courses usually become in practice European history. Look at the textbooks and courses and see how seldom you find anything about any other part of the world than Europe, except for an account of the activities of Europe in foreign lands. The student is seldom given any real information about the rich background of culture of India and China, for example, and too frequently there is the old story of how civilization was now and again "saved" during the Middle Ages when western armies won a victory over armies from the East, although the civilization of parts of Asia throughout the Middle Ages was superior to that of Europe in various ways.

Happily there are signs that a broader treatment will prevail. Eastern peoples have their contributions to make to the modern world, and one of the most interesting aspects of that world is the interaction of East and West. The European influence is the predominant one, apparently, for there has long been in progress a real Europeanization of the world, but there is also a reaction of Eastern upon Western civilization. Not only for that reason but because the peoples of the East are fellowmen with interests fundamentally like our own, it is necessary that young American citizens know something about them, have some understanding of their points of view, and have some ability to view them sympathetically even where there may be dissent from particular points of belief or outlook.

A radically new synthesis is needed—a synthesis which will take time and many experiments—but I am not willing to say that it is necessary for us to wait for special textbooks. They will help when they come, but if men and women with a reasonable knowledge of history, a modern outlook and understanding of what has happened and is happening in our world, and an acquaintance with schools would devise or plan the right sort of units for the development

which I have discussed, it would be possible with the present type of text as a reference work, with additional reading and visual material, to carry on valuable and suggestive courses in the field of world history. Two years would be better for such courses, if possible. But if only one year is available, do not try to do two years' work in that one year. Select a smaller number of major themes and treat them more fully. For instance, something of the story of fine arts and of literature in reference to general social history is highly desirable, but I would rather leave them out bodily than turn them into mere catalogues—names of artists and writers and of their works—that can mean little or nothing to the youthful readers.

In any case, we have opportunities for rich correlation with the other fields of study, for example, literature, music, and the fine arts. If, in some literature course, good translations from the literature of the Greeks are read, why should they be a thing apart instead of material to study when we are taking up the history of the Greeks and the heritage they left to the modern world, an important part of which is their literature? Why confine ourselves in the history class to the naming of Greek writers and their works without ever looking at lines which even one of them wrote? Why study their marvelous art with only lists of names and with the half-dozen pictures that happen to be in the textbook when it is so easy and inexpensive to get other materials and when sometimes there are patterns of Greek architecture in the home city and models in local art museums? Incidentally, such a course might correlate very closely with the so-called problems-of-democracy work which is increasingly offered in the last year of high school.

Let us now turn to the history of the national community. At present it is customary in the schools to have three cycles of American history, one in the fourth and fifth grades, another in the seventh and eighth, and another in the eleventh or twelfth. There is a little increasing maturity of treatment in each succeeding level, but in a great measure one is a review of what went before, with some variation of detail and some difference of proportion. The result is a measure of staleness at the upper levels, particularly in the senior high school. I base this statement on practical experience as high-school teacher and as a visitor in scores of high-school classrooms. I believe that every experienced teacher will agree that the "edge" has been taken off in senior high-school American history.

A better organization is possible throughout. In the first eight grades, for example, we might have one survey instead of two, making this one more adequate. For the senior high school there should

be an entirely new synthesis, one that is fresh and interesting and illuminating. It can be done. My suggestion is that a topical organization be adopted instead of a period organization, one in which certain major topics are organized into subject units which will run through the field of American history. That idea has been proposed before, and I claim no originality for it, but it has been much more discussed than applied. In fact, it has not been applied at all. One textbook writer twenty-five years ago attempted a partial application, but the volume went out of print some time ago. One or two brief outlines have been influenced by the topical idea. New York State in 1919 published a course of study built upon this plan. That course has been very little applied, chiefly, I am told, because teachers hesitate to attempt it with existing textbooks without special assistance.

As an example of the type of thing, not as a model, I will list the five main topics which are used. You will note the contrast to the period organization: (1) "the Americans, a Nation of Immigrants," running through to the present; (2) "The Rise and Progress of Democratic Institutions in the United States"; (3) "The Foreign Relations of the United States"; (4) "The Economic History of the United States"; and (5) "Social Development of the United States."

If I were on a committee to prepare a course of this kind, I should want substantial changes in that offering. For example, the topic, "economic history of the United States," is too general and ill-defined. I should want certain entirely different ones. I think there should be a story of thought and culture in the United States, which might contain material of great interest to students of high-school age. The whole story of the coming of the age of science should constitute a major topic; not until that topic has been studied are we ready to take up the transformation of economic life and social life which rests upon that scientific change. This story of the coming of what we call the industrial revolution, which was also a revolution in transport, commerce, agriculture, the development of machines and engineering, the iron and steel industry, coal and oil and power, this whole story of the age of invention and applied science is full of the most fascinating interest if we organize it into a connected story and humanize it. There are plenty of thrills in it if we look for them intelligently.

You cannot carry on this work adequately if you have nothing but a textbook. There are a great variety of possible syntheses, leaving room for the individuality of teachers, but whatever your synthesis and whatever your method, you do need suitable material for those pupils to read. The textbook at present is only a reference book and

must be used by having the pupils go over it several times to trace the topical threads. Later they can have a rapid review by putting it together again in period topics. In the end they will know much more about the usual detail than if the conventional procedure of teaching had been followed.

However, additional material of much richer content than the textbook's is needed. For example the *Chronicles of America*, published by the Yale University Press, provides fifty volumes that are scholarly but popular and interesting in style, small, light, and easy to handle. Many of them are well suited to a topical study. They will be read by high-school pupils with many times more interest than the best textbooks. This is more than theory. In the few places where experiments have been made, notably in the laboratory school of the University of Chicago, the high-school pupils read hundreds and hundreds of pages in one term—more than the average college student reads. I had some chance to check up on the ground covered in that school. When I saw the cards on which pupils reported, the results surprised me. It makes all the difference in the world if pupils have real historical material. One objective we all like to claim is creating a taste for the reading of history. I wonder how many pupils read history for pleasure in the public library after they are through with their formal history. But what can we expect of them when we do not give them any history to read in school? You cannot create a taste for reading history with the textbook alone.

For American history built on a topical plan, *The Pageant of America*, published by the Yale University Press, is even better adapted than the Chronicles. Twelve of the fifteen volumes have been published, providing a rich collection of many hundreds of pictures with accompanying text, all on topical lines. Political history is assembled in several volumes; there is one volume on "The Epic of Industry," one on "Commerce," one on "Toilers on Land and Sea" (the farmer and the fisherman), two on the "Fine Arts in America," one on "Education and Religion," and volumes are soon to appear on the drama and on sports and recreation. These volumes can be purchased separately. Material of this sort will greatly facilitate a topical treatment and will immensely enrich history work and will produce results surprising to those who have seen only the usual procedure of question-and-answer and textbook work which goes on in most classrooms.

There are many advantages in the topical synthesis. The mere freshness of it would justify the plan, but there is much else to be said for it. Our usual period survey breaks up into fragments the devel-

opment of the story of immigration, the story of the rise of big business, or the story of the growth of labor organization, and the radical movements. Only here and there a teacher saves something through topical reviews. Yet, if we want practical results in understanding the world in which we live, such topical studies are exactly the kind of thing we need. I am not saying that there should be no work by period organization. On the contrary, we need both. If you want to understand the developing life of a people, you must see things in their relations. But if there is any residuum at all from earlier grade levels (and if there is none, I wonder how we can justify the courses), we ought to be able to make this new topical attack successfully in the senior high school.

A practical advantage of this topical organization in American history is that it appeals to people of both radical and conservative leanings. You preserve the continuity upon which the historian of today insists. At the same time, you include the best of the objectives set up by the more radical type of reformer, who wants to throw all social science together in a general merger. The trouble with the latter kind of person is that he is usually a professor of education or an administrator who knows very little about the subject-matter and overlooks the fact that history has a distinctive purpose among the social sciences in that it is genetic.

History's function is to identify origins and trace developments, which is the vital thing in its educational value. Why? Because we live in a changing world. If it is the business of education to adjust us to our environment, then let us remember that the chief feature of that environment is that it changes rapidly. It can readily be shown from the perspective of history that from epoch to epoch there is increasing rapidity in the rate of change. Therefore, the subject of study which builds in us through a period of years the clear concept of change and development is of fundamental importance in education. The topical treatment lends itself very well to building a genetic conception of society. Such a differentiation between the junior and senior high-school levels would accomplish a great part of what some of the reformers want while retaining the peculiar value of the study of history upon which the historian properly insists.

The possibilities of interesting correlations with other subjects are striking. Much that I said about world history applies especially in the correlation of history with civics. A study of this kind in the eleventh year will make far more fruitful the work in the problems of American democracy course. Even a year and a half for the two courses will accomplish much more than will a two-year course

with the conventional survey of American history followed by the usual long list of so-called "problems." The problems course might be planned upon radically different lines to stimulate real thinking in the study of a few actual problems instead of a hazy scanning of dozens of so-called problems about which the pupils read only a few paragraphs.

In conclusion, let us think of the two lines of development as one. Could we, perhaps, especially in a two-year survey of world history, include what is really vital and important in our European history and more besides? Moreover, we have here a point of view. Is it not perfectly possible, without a formal change of title, in a course of general or modern European history to adopt at least some measure of this world point of view, and may we not apply the principles of selection and synthesis in much the same way? Might not more of the world point of view be profitable in the American-history course? Perhaps among all the welter of suggestions and differences of opinion about this and that course, we have here certain basic principles that may help us immensely. I am aware there are still many problems left. How much time is needed for ancient history? What about medieval Europe? When, where, and for how long should we introduce the history of the Far East? What of the United States in a world history course? What of Latin America? There are many other important practical problems. I lay before you these fundamental features in the hope that you may be interested to work for such goals and perhaps achieve some of the rich possibilities they hold.

Home Economics

Evaluating the Home-Economics Curriculum

W. W. Charters[1]

In evaluating courses of instruction in home economics two factors are involved. The standardizing of measurements must be based upon objectives. Once these objectives have been determined, it becomes necessary to work out the techniques of measuring. Unfortunately, in the case of home economics as in the case of most school subjects beyond the elementary grades, we do not have techniques by which to measure more than the most superficial products of the study. Since there is no consensus as to what the objectives are, it would be wise to consider the objectives of home economics and to ignore the techniques of measuring the accomplishments of students in reaching these objectives.

We can at once distinguish three types of objectives in high-school teaching. The first of these has to do with skill. That is to say, a definite trend is discernible particularly in the history of home economics toward the development of skillfulness in handling the activities to which a knowledge of home economics contributes. In the early stages in the school, and particularly in the home, stress was laid upon home-making skills, and with this objective in mind all effort was bent toward the development of skillful housekeepers. Later, as vocational objectives began to develop, skillfullness in dealing with food and clothing became pronounced so that many schools offering courses in home economics are emphasizing vocational skills.

A second set of objectives may be described as those contributing information about home economics. Some believe that the objective of home-economics classes should be to give a wide variety of information about technical processes of home-making. Others believe that the aims of home-economics teaching should be cultural rather than technical. It is felt that the home and the processes which grew up within the home and have later spread into regions far beyond the home are in themselves as worthy of study as are any of the other major processes of civilization. In such courses stress is laid upon backgrounds, insights, and overviews. Both of these objectives are now taught with varying degrees of emphasis.

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There is emerging a third trend, however, which I believe constitutes one of the important objectives to be emphasized and controlled in coming years. This objective is the development of a scientific attitude toward the problems included within courses in home economics. There is no doubt that skills are necessary, and it is equally apparent that information, both technical and cultural, both in the field of home economics and in the underlying subjects, should be mastered, but the mere mastery of these subjects may induce situations in which the learner will find herself greatly embarrassed. When new situations arise about which she has no information and when new activities have to be used in which she has not acquired skill, she is handicapped because she has nothing with which to meet the situation.

In such cases, she must have techniques that will enable her to control the new situations. She must develop a scientific attitude in which there is a tendency to depreciate the field of emotions, prejudices, and instincts. The student looks on the problem in an impersonal way and, in doing so, frees her mind from shackles which impede wise decisions.

To be more specific, the scientific attitude involves five phases. When a new problem of any sort confronts a woman who is scientifically trained, the first thing that she does is to analyze the problem and see what its factors are. Then she collects data which bear upon the problem and in doing this she discovers leads which may help her to solve the problem. When this has been done, she thinks the problem through, tries it out, and finally verifies her conclusions to see whether or not they are correct.

The foregoing is a condensed statement of the well-known laws of thought which are subscribed to by everyone in courses in psychology and logic. Unfortunately, in too many courses in home economics, as in other fields, students are given the solutions to problems and are not given the opportunity to reach these solutions for themselves. The usual reason given for this is that there is much material to "cover." The weakness of the situation lies in the fact that by being given solutions already made they do not "cover" the problems. The better alternative is to teach less information and to develop greater skill in the techniques of reaching such solutions.

Two or three illustrations are called to mind. On our own campus at the present time Dean Gaw is dealing with the problem of smoking by women in halls and dormitories. It would have been an easy matter for her to assemble the wisest judgments of the faculty and to make a decision as to whether or not the rule concerning

smoking should be allowed to lapse. But in doing this, she would have missed the opportunity to teach the girls how to think through their problems of social behavior. Consequently, desiring as she did to develop techniques of thinking in the minds of the women on the campus, the leaders of the various women's organizations were given an opportunity to express their opinions. They were given as much information as was attainable in experimental literature. Faculty members were called in to give the students the benefit of their opinions. Discussions were continued for some length of time by the student leaders, and information was collected through casual conversations with other students. During Christmas and Easter vacations the people of their home communities were asked to give their opinions on the matter and, after as careful an analysis of the situation as possible, the final decision was left with the students themselves. Personally, I feel that the decision was of far less importance than was the experience of thinking through this social problem.

The courses in home management have, in many institutions, developed along the line of case studies. In other institutions the selection and management of clothing has been handled by the problem method. Much has been done by teachers in the field and much remains to be accomplished.

We have thus three distinct types of objectives, and it is apparent that all three of them are of importance in developing efficient women. Of the three objectives, the development of the scientific attitude is in my mind by far the most important.

Parental Education for Parents and Teachers

Anna Garlin Spencer[1]

Herbert Spencer once said, after reading over a large number of school textbooks, that "one would think all education was for a race of celibates." Now education recognizes in several important ways that most boys and girls grow up to marry and have children. The latest designation of parenthood is that of a "profession." Hence, the preparation for its successful service has risen to the dignity of college classes and much approach in the high school.

What are the requirements of a vocation which can be called a profession? First, certain standards of preparation and of skill shall be exacted of all who would practice it. Second, a certain minimum of preparation shall be easily available if not compulsory. The third

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requirement must be stated, to fit this particular profession, namely, that all those having intimate touch with children, whether as parents or teachers, shall understand something of the tremendous significance of the experience of early life and shall be fitted, if only in small measure, to be of use to babies from their birth in the difficult process of social adjustment. Fourth, there should in the profession of parenthood be some *esprit de corps,* some bond of comradeship with other parents and the teachers who influence child life so that continuity and unity may characterize training for this social adjustment.

Persons who accept these requirements are now at work to create "courses of study in parental education." "Centers of family consultations service" have been begun, as well as "child-guidance clinics," while parent-teacher associations form more popular and less academic agencies.

The least a parent must know about child needs to be at all successful may be summarized somewhat as follows:

1. What are the standards of physical health for the normal child and how can these be secured?
2. What are mental sanity and nervous stability, and what environment and emotional stimuli tend to secure these?
3. What can be done in case of character problems, and how can conflicts and crises that lead to weakness or stubbornness be avoided?
4. How to find out what is likely to be the vocational aptitude of a child of no special genius; and what sort of schooling gives pre-vocational stimuli to enable that knowledge to be gained in advance of the years which must be given to earning in self-support?
5. What sort of friends should the child have at command, from the social affiliations of the parents, from the church connection, from the school life, or from the summer recreation?
6. How can the growing child, especially the adolescent youth, get from community life such discipline toward self-restraint and toward obedience to law as the older, more isolated family life with its domestic industries gave?

These are some of the problems now pressing upon the modern parent which have led to child-study chapters and parent-teacher associations, all the manifold new work of the pre-school teachers and the progressive educational leaders, and the new courses in parental education spoken of above. These are some of the problems that have lifted the departments of household art and household science and household economics in the colleges and universities from the mere study of housekeeping to the higher ambitions of home-making, and they have led to an alliance of the home and all the socializing influences of society.

It was thought at first that when the largest part of domestic labor was transferred from the household to the factory and shop that women would not only have more leisure but find it easier to be good mothers. They do have more leisure, but neither mothers nor fathers are able to get along well with less care or less sacrificial devotion to their children than in the past. Indeed, it is profoundly true that it takes more time, more personal attention, and more instructed intelligence to be a successful parent today than ever before in our civilization. The reasons for this are obvious. First, the social standard of child care has immensely risen. The child must be fed properly, must have medical and nursing care in consonance with the new crusade against preventable disease; must attend school the compulsory minimum at least, and the pressure for further preparation for successful earning labor rises all the time. The youth must have some social means provided for the exercise of that as yet ill-regulated energy and emotional urge which was for many, at least, held down to obligated labor in the past. Moreover, the home is not now a legal or a social unit as it was in the past.

However wise and good the parents may be, the pull of the community life and the herd-minded push of the young people themselves cannot be overcome by any one family group alone. There must be today special organization to attain personal ends of right living. The fashions that lead to conformity in dress, in standards of living, in methods of recreation gained in reading of the newspaper and in listening to the radio, standards of what is right and wise, these fashions of living rule even those superior to their demands. We have, therefore, not found the place yet where parents may take ease and let society provide for their children what is best. On the contrary, the new movement for standardizing by education the minimum, at least, of wise and helpful child-training has come none too soon to help parents over a difficult place in the home life. The experts run ahead and tell what should be done to make children what they should be for the benefit of the social whole. The parents, burdened financially, and with demands upon each, especially the fathers, for absorbing devotion to some one task, hurry from one form of help to another, trying to get breath between the new demands and, at the same time, to make a sane and sensible and happy family life in which, as they know well, the child can alone find and make its own adjustments.

The average parent means well by his child. Both mother and father will sacrifice much to secure for that child a better chance or at least as good a chance as came to the parent. The world presses

its new and bewildering opportunities for freedom of action and even for dangerous experimentation upon each young life, and the parents often stand aghast at the risks their children run in premature experience of the perils and the adventures of a life experience made more complex each decade.

Also, a new danger threatens in the newly instructed consciousness of parents. One need not believe with some extremists in psychology that "the fate of the child in temperament and in tendency is settled before its third birthday." Happily, we can still mix the special research statements of the experts with common sense as the old doctor bade his patients do with his medicines. But it is apparently proved that the early impressions we used to think so transient and hence of little importance wear deep grooves in the consciousness and lead to many subconscious tendencies, fears, and desires that bode ill or well for the child's later experience. This new conception of the importance of the experiences of early childhood gives parents who are thoughtful and conscientious a renewed desire for better knowledge of all that makes for true education at home and at school.

We are sure that it is right definitely to link parents and teachers together in the consciousness of this need and in all plans for meeting it wisely. It is, therefore, well that the colleges, especially those having teacher-training courses and also courses in household science and art, should lead in parental education. It is, however, as certain that other agencies are needed quite as much. The church is the institution nearest the family, and its educational methods and provisions should include scientific, ethically motivated courses of adult education, particularly parental education. Already the clubs and volunteer associations of those actually facing parental difficulties give great aid to the puzzled. Already the parent-teacher associations with their millions of students and helpers give a vital touch of human experience to the more academic work of the college and university. Already progressive educators give us experimental demonstrations of how best to reach the creative energy of the child and set it moving in activities that lead to strength and self-mastery and all that makes human life worth while.

It is now time to evaluate more perfectly all the differing but kindred agencies for showing men and women how to be successful parents and to find the right place in general education of the schools for the different steps of instructive help toward that end. This is the main reason why such institutes as this are of incalculable value in leading toward the better society of which the better parents must be a conscious and an achieving part.

Industrial Arts and Vocational Education[1]

Relation of Industrial Arts to Vocational Education

Arthur B. Mays[2]

One of the most fascinating aspects of life is the certainty and rapidity of its changes. Every living thing changes continuously; each moment reveals new movements, postures, and relationships. Human life expands, contracts, advances, retreats, assumes new attitudes, experiences new desires, grows, or deteriorates. The one impossibility in life is to remain unchanged. Human institutions, likewise, cannot become stationary. Either they change continually or they disappear. As institutions change, their relationships with other institutions must change also; and since the significance of any institution is measured by its effects on and reactions to other institutions, a study of institutional relationships is a necessary condition of their appreciation. Fully to understand industrial arts and vocational-industrial education therefore, one must view them in their relation both to other social institutions and to each other. My purpose here is to inquire into their relation to each other, but, since both are under the necessity of continuous change, their relationship does not remain constant. Hence, my theme becomes: the changing relations of industrial arts and vocational education.

To study growth intelligently, it is necessary to know origins and the forces which produce changes. Let us, then, examine the beginnings of the two educational developments whose relationship we shall try to define. First, from whence came the educational phenomenon we now call industrial arts? Industrial arts owes its birth to the conjunction of two influences which were actively at work in the thinking of the educational leadership of the last quarter of the nineteenth century. One of these arose from the urgent need for a ready supply of skilled workers to man the rapidly expanding industries, which were so greatly stimulated to growth by the Civil War and the amazing series of mechanical inventions and scientific discoveries of the last half of the century. The other was an outgrowth of the consciousness of the inadequacy, for the times, of a type of school education designed for the training of the children of

[1] The address by Gerrit A. Beneker is found on page 73 under "Art."

[2] University of Illinois.

a land-owning, rural-minded aristocracy. America was rapidly becoming industrial, urban, and democratic in the modern sense, and the educational forms and practices of an earlier civilization were proving most uncomfortable.

In harmony with this consciousness was the new educational philosophy which began to take hold on the thinking of the leaders. This philosophy suggested the importance of understanding, of interest, and particularly of learning through concrete experiences with practical problems of construction and with the manual manipulation of the materials used in the work-life of the people. Today, it seems to us that the actuating factor in the efforts of that period, however then expressed, was a determined protest against the bloodless ascetic bookishness of all school education. Such education in a throbbing, vibrant age of adventure, discovery, experimentation, and economic conquest was intolerable. Hence, while the giant new industries were calling loudly for trained workers, educators who were sufficiently sensitive to feel the thrill of the new life being created about them demanded, also, a new education which, while retaining all that was good from the past, included expressions of the spirit of the new day. Early the industrial-education leaders united the two needs in a formula which called for work that expressed the spirit of the new civilization and also give a basic vocational education.

It was not possible for even the most progressive educational statesmanship of the seventies to accept specific vocational education as a function of the public schools. Such a notion occurred to many, but they recoiled from it with a pious horror which is hard for us to understand. They sought a type of industrial activity which would lend itself to the traditional procedures of academic schools, yet would be industrial in content; hence it must be at once disciplinary, that is, educative in a broad general sense, and vocational, in that it so trained the mechanical powers or "faculties" that pupils could go into industrial occupations and capitalize their school training.

The debates on this problem were long and bitter; the search was persistent and discouraging. Then, in a flash, the problem was solved, at least for the time being. The solution was the formal, abstract, exacting shop work of the Russian engineering school which President Runkle of the Massachusetts Institute of Technology saw exhibited at the Centennial Exposition at Philadelphia in 1876. Dr. Woodward, at Washington University, immediately adopted this work for his projected industrial school of secondary grade and named it "manual training." This manual training met all the prescribed conditions of the nineteenth-century public education, yet it was in-

dustrial and, in a most satisfactory sense, vocational. It was this strange hybrid which, through years of testing, growth, and experimentation, has emerged as present-day industrial arts. The details of its evolution are many and interesting but need not be related here. Suffice it to say that in the beginning it was heralded as a solution of the problem of vocational-industrial education and became known later as a definite phase of general education only slightly related to vocational education.

After twenty years of manual training, those interested in vocational education became convinced that the problem of vocational-industrial education was far from solved. This school subject which educators so glibly referred to as "vocational work" was discovered to be something else, and a renewed demand was presented for what was termed "real" vocational education. Certain experiments in trade schools had been carried on throughout the history of the manual-training movement, and various schemes of part-time work and co-operative apprenticeship had been tried. All these efforts, dealing with those either actually engaged in the trades or with boys and girls definitely expecting to become industrial workers, were effective and obviously more nearly genuine vocational education than the high-school manual training, which was given chiefly to those who were destined never to engage in the mechanical trades. Hence, the new advocates of vocational education began to disparage manual training and to laud the trade school and the part-time school. With the organization of the National Society for the Promotion of Industrial Education in 1907, a great impetus was given to vocational-industrial education as opposed to the manual training of the high schools. Then began an antagonistic relationship between these two divisions of industrial education, which resulted in a very significant development of manual training.

It should be remembered here that the teachers of manual training had from the first insisted that their subject possessed important vocational value. When the vocational-education propagandists insisted that such was not the case and that manual training was largely a waste of time and money since it was neither cultural nor vocational, the manual-training man placed himself at once on the defensive. At first, he argued for the vocational value of his work; then, when a sickening realization came to him that his opponent probably was right, he began vigorously to add vocational value to his work. It was the effort to do this that made of manual training what we know as industrial arts. In order to refute the charge that his work was mere play, he installed factory machinery, factory methods of routing

work, and careful record-keeping; and he set up much higher standards of workmanship. Furthermore, he gave more attention to industry. He visited factories and construction projects, often taking his pupils with him; he introduced the study of industrial problems. Presently he discovered that in trying to prove the vocational value of his work, he had made it more than ever educational, so much so, indeed, that he no longer needed to defend it on the grounds of its being vocational. He began, too, to realize that after all few of his pupils expected to become mechanics but that all needed the kind of training and information he now was able to give them. Thus, manual training fought itself out of a badly compromised position into a place of security and unquestioned importance, although it apparently lost the fight with vocational education.

After 1917 vocational education experienced an amazing growth and is developing rapidly even today. The same is true of industrial arts. The old antagonism, engendered through the early years of struggle, began to die out with the making of clearer definitions of the distinctive functions of the two phases of industrial education. The one was to train specifically for industrial occupations; the other, to interpret the industrial aspect of modern life, to offer opportunity for growth and the development of certain needed powers, and to give a broad base for later choices and training. With this understanding, each began to recognize the importance of the other. It is most gratifying that the American Vocational Association recently created a division of industrial arts. Thus have the two ideas of general-industrial education and vocational-industrial education been united, then divided, and finally brought into close relationship again.

What are the factors producing a new relationship between industrial arts and vocational education? In the first place, the earlier reaction against the old faculty psychology carried us a bit too far in our views on the transfer of training. A saner expression of views on educational values is now possible. The idea that skill and knowledge acquired in a school shop, for whatever purpose, will function in a commercial shop of the same sort may now freely be expressed without fear that the devastating epithet, "formal disciplinarian," will be hurled at one. We are, it seems, becoming more accustomed to the new psychology and are less self-conscious with reference to it and may, therefore, be calmer in judgment than we were as its new converts. This fact has made possible a franker recognition of the close resemblance between industrial arts of the better sort and trade training of like grade. Indeed, except for the number of hours per day or week spent in the shop, there is very little difference to be

noticed between a high-grade, well-equipped, high-school industrial-arts shop and a first-class trade-school shop. There are differences, of course, very significant differences, but there is so much that is common to both that neither may longer justly hold the other in contempt. Thus, we are now able to experience genuine respect for each other, and this fact has increased greatly the effectiveness of the whole field of industrial education. The growing community of interest and mutual recognition of value between the two divisions of industrial education are everywhere evident and promise to bring still closer together the leadership and the activities of the two phases of the larger field.

In the next place, a marked change in the character and quality of the training of industrial teachers in both divisions of the field has occurred within recent years. Only a short time ago, the trade teacher was often thought of as an uneducated mechanic of long trade experience, so long, in fact, that whatever of fineness in texture or coloring which might have existed in his nature had been changed into a hardness of temper suitable to the work of inducting tough young apprentices into a similar experience. In like manner, we often thought of the industrial-arts teacher as a product of a teacher-training institution where academic standards were low and where most unpractical theories of pedagogy were taught. As for his mechanical and technical training, it consisted, so it was thought, chiefly of playing at work benches with tie racks, pin trays, candle sticks, and such toys. Or we pictured him as an easy-going young fellow who attended a six-weeks chautauqua course in woodwork or a similar course in a pleasantly situated summer school, thereby becoming fully qualified as a shop teacher.

In these days, we find an astonishingly large number of industrial-arts teachers with sufficient trade experience to satisfy the most exacting requirements of the vocational-education authorities and an equally striking number of trade teachers with a college education. Some of our best trade-training departments require a minimum of two years' college attendance for all trade teachers; and the remarkable thing about it is that they seem able to find such men in large enough numbers to maintain this standard of preparation. Thus, with our industrial-arts shops manned by college graduates with trade experience and our trade-school shops manned by trade-trained men with college educations, we cannot avoid, if we would, a much closer relationship between the two types of industrial teaching than formerly obtained. This change is all gain, and we shall best be served when it is possible freely to exchange teachers from one division to another.

In the third instance, the two types of work have assumed new relationships to one another as a result of the emphasis on the vocational-guidance value of industrial arts. Vocational education is so costly and so specific in purpose that the careful selection of trainees is now regarded as of great importance. Whatever other guidance values industrial arts may possess, it unquestionably can be made to serve in aiding boys to determine, first, whether they will become mechanics and, if so, the particular industrial field they will enter. Much has been said of the vocational-guidance value of industrial-arts courses, much, indeed, that may well be questioned; but there can be little room for doubt that they may be made definitely to contribute to the making of vocational choices among the industrial trades. Hence a new relationship has been established between these two divisions of our field, which causes the one increasingly to look to the other as the proving-ground of its pupils. I do not think this is the chief value of industrial arts, nor even one of its most important functions, but it is one of its several functions and one which serves to bring it into closer and more vital touch with vocational-industrial education.

Another factor affecting the relationship between the industrial-arts and vocational-industrial training is that of the attitudes toward vocational training fostered by industrial arts. This is doubtless a less tangible factor than those discussed thus far, less tangible, but none the less real. Nor is this idea new. It was expressed often in Dr. Woodward's day. If vocational-industrial education is to enjoy the prestige which it must have to succeed in a democracy like ours, it must be free from the taint of pauperism and the social stigma attached to it by the Statute of Artificers of 1562 and the Poor Law of 1601 in England and the compulsory apprenticeship of the New England colonies. Our vaunted democracy is not wholly free from hypocrisy and is in no wise restrained by a rigid inconsistency in thought and practice. Our fathers expressed great abhorrence of class distinctions but made such distinctions as a matter of course and fostered them in the educational practices of their day.

In our day, social opinion brings to bear much pressure upon youth in the matter of vocational choices. And since the class distinctions practiced generally in our country have had their basis in economic and occupational differences rather than in family or blood differences as formerly, the attitudes engendered toward any group of occupations is of real social significance. Thus it comes about that vocational-industrial education is in need of some effective influence which will cause our youth to think more highly of the industrial

trades. One of the strongest of such influences is the industrial-arts courses of the junior and senior high schools. Boys who have worked with their hands, trying to fashion industrial products of the sort made by mechanics, scarcely can despise the skill and ability of the mechanic. Also, the study of industrial processes and problems which industrial arts fosters greatly increases the understanding of the significance of industrial work as a social enterprise and leads to a realization of the necessity for industrial training. Thus, it is highly probable that the all but universal teaching of industrial arts is continually creating a more favorable atmosphere for the growth of vocational-industrial education.

The definition of territories and the acknowledgement by each division of the two fields of the other's genuine value which followed the inauguration of the vocational-educational movement, started the *entente cordiale* which now obtains. With these friendly relations established, new aspects of the inherent kinship of these two phases of education became apparent, and with clearer vision to guide, new relationships are being established. But what of the future?

One may not in any wise be dogmatic about the future, but it is not unbecoming in a student of any subject to suggest possible developments in his field of study. May I, therefore, point out some economic trends which may produce further changes in the relationship between industrial-arts and vocational-industrial education? The most obvious fact in modern industrial organization is specialization. Likewise, there can be little doubt that specialization will be much greater in the future. Specialization of process places upon the worker the supreme necessity for versatility—the ability easily and quickly to turn from one specialized occupation to another. This ability often is based upon broad foundations of manual skill and technical knowledge. Hence, I raise the question whether the important industrial training of the future will not be more like a rich, varied program of industrial arts than like specific, intensive trade-training.

In the next place, there is a most remarkable tendency within industry to expand its program of adjustment training—the adjusting of an employee's training and knowledge to highly specialized tasks or jobs. This is true for every grade of worker from the semi-skilled operative to the engineering-college graduate. As this program of industrial training within industry grows, the schools are increasingly questioning the need of their offering specialized training. Engineering colleges are anxiously facing this question now. And I once more raise the question whether the future need of industrial workers will

not best be met by a general type of training during the school period, followed by a program of adjustment training maintained by industry. The question is not to be lightly put aside if present trends mean anything. I do not know the answer. I am sure of this, however, that a sound solution of the problem of industrial education will be reached only when the leaders in every department of the field come to see their work in its relation to every other department and to the field as a whole; when perfect harmony and co-operation of effort prevail; and when industrial education itself is more generally regarded as but a phase of a complete program of education for a society which earnestly desires to be a genuine democracy.

Journalism

The High-School Newspaper--Bigger but Better?

Rowena Harvey[1]

We adults read with mild amusement of the feat of Alice in Wonderland growing to huge stature all of a moment, but with what reaction do we view the rapid increase in the size of high-school papers from letter-paper proportions to counterparts of commercial papers? Opinion is divided, although those who raise voice against the increased size are in the minority. Those who have been faculty advisors for over a decade can best appreciate the change that has come about in high-school papers during the "present era," a period which dates back to about 1920, the year the first national high-school newspaper contest was held, sponsored by the Central Interscholastic Press Association at the University of Wisconsin. The first contest and also the second were won by the *West High Weekly*, West High School, Minneapolis. This paper has, more than any other, determined what the high-school paper of today was to be like —and chief among its features which were copied was its size.

Today this paper and other individual papers have, to a certain extent, lost their leadership, for the high-school press associations with their conventions and monthly publications have assumed the directing force. But these bodies through their continued awards of first places to seven-column papers have tended to crystallize the belief that only a big paper may have access through the celestial gates to the heaven of national fame.

So to the high-school press associations goes the credit—or blame—for our large newspapers. I remember a faculty advisor returning from the second C. I. P. A. convention and explaining the fact that her three-column paper received no recognition by saying, "It's too small." The paper in a year's time jumped to six columns and then to seven. In fact, there seemed to be a race among schools to see which could issue the largest paper. Publications of two, three, or four columns went up to five, six, seven, or even eight columns, although most of those which expanded to eight columns soon saw the error of their ways and went back to seven. However, many schools today are issuing papers beyond their power

[1] Director of Publications, South Side High School, Fort Wayne, Indiana.

to support, not financially, but editorially. Even five columns may be too much to be filled with superior material.

The proponents of the larger papers have plenty of reasons to advance in favor of the more generous proportions. They say the paper is more attractive. It is easier and cheaper to make up and print than its equivalent, six pages of five columns. The pupils have greater pride in a large paper and get great satisfaction in comparing it with a commercial paper and contrasting it with a small high-school paper. School pride demands a larger paper. And so for these and other reasons, they keep to their seven columns. Only one paper that I know has had the courage to face possible displeasure in its own school and probable lower ranking in contests by reducing its size to five columns. This paper is the *Stadium World* of Tacoma, Washington. It publishes eight pages as a usual thing after starting out in the fall with four or six. I believe that this paper has won all-American rating just three times, for the judges pass it over for flashier-looking papers. And yet I study this paper more than any other in the United States, for I think it is one of the very best.

Here are some of the handicaps of an overly large paper. In lean weeks it has a problem of getting enough news and features to fill the wide expanse of the front page without stretching its news articles or including pointless features. Every inch of the front page of a five-column paper can be filled with worth-while news, concisely written. The editorial pages of many of the larger papers are of mediocre quality. Seemingly there is not enough good editorial page material to fill them. A smaller page size would do away with some of this poorer stuff. On the other hand, a large paper with good material on its editorial pages, especially the Minneapolis papers, could group its features of a more literary nature and put them on a separate feature page if a smaller page size were adopted. With six or eight pages, the content of the whole paper could be classified and grouped to better advantage. Advertising could be grouped according to neighborhood locality, a boon to both paper and small advertiser. A five-column paper could be more easily expanded according to the need of the week from six to eight pages. In many ways, for a high school, a five-column paper is preferable to a seven-column paper. The chief objection to it is the added expense of printing two runs for eight pages or six pages, instead of one run for four pages. But I believe that the advertising could be increased to such an extent that this increased cost could easily be met, especially if the advertisers knew that their advertisements would not be buried—would, in fact, stand out. Five columns as a standard

would effectively do away with the practice of smaller schools issuing a seven- or eight-column paper every two or three weeks instead of giving news to the school every week.

However, the seven-column papers will not voluntarily cut their size in face of the protest of the students and with the sure knowledge that they are practically effacing themselves from the list of prize winners. The only possible way in which the five-column paper could become the standard size would be for the national press associations, carrying out the wishes of their members, to issue a decree to this effect. This was done by the principals in Kansas City, although, as I understand their action, they went too far and limited the number of pages as well as the page size. I remember clearly two papers from that city. The innate quality of neither was hurt, although one paper had to omit some news which could have been kept if the number of pages had not been limited. The other paper was greatly improved. Instead of containing a mass of dead filler, instead of being a deadly dull paper, every line of that paper sparkled.

C. I. P. A. three years ago showed the beginning of an agitation for five-column papers, and the National Scholastic Press Association may take up action where C. I. P. A. left off. Personally, I hope it does, although most fond owners of the larger papers may rebel vigorously at the idea, as I did, violently, three years ago. If no other benefit would result from the change, there would be this one—judges in the contests could and would have to consider the merit of the papers more, since their eyes and mind would no longer be dominated by the impression of excellence created by size and impressive make-ups. The papers would meet this situation by better copy and better papers would be created.

The *West High Weekly* not only influenced the size of high-school papers but gave a new value to them, an intangible contribution to the advancement of high-school papers not easily appreciated. That is, the *West High Weekly*, instead of masking its reason for being under the plea of motivating the writing of a score of pupils, showed by its content that its purpose in life was to benefit several thousand pupils and a large administrative force and faculty by being a newspaper—a house organ—to stimulate and direct the activities in the school. Many faculty advisors and principals still believe that the prime function of a high-school newspaper is to stimulate creative writing, a purpose that did dominate the publications before the beginning of the present era. But that purpose cannot hold true at the present time. To function properly along administrative and extra-curricular lines a modern high school of moderate size needs

these two things—a home-room system, with bulletins from the central office, and a good newspaper, which is the best means of getting over to the student body knowledge of what is going on, what should be done, and the aims and ideals of the school. Because of the needs of the modern high school, the old-style news-literary magazine, with the emphasis on literary, is now practically dead.

As a corollary to publishing more and better news, came the necessity of publishing the paper more frequently, once a week now being the standard time unit. But with the improvement in the frequency of publishing came an attendant evil—the greatest weakness in connection with the present high-school paper—a slump or decadence in the quality of English. I am not alone in this opinion, for Sigma Delta Chi of Indiana University has instituted a yearly contest for newspapers in which fifty percent of the rating depends upon the quality of English used in order to raise the quality of English used in the high-school papers. After acting as a judge in the first one and after carefully examining the entries, Professor H. H. Carter, head of the English Department at the University, stated: "It is certainly true that the quality of English used in student publications often leaves much to be desired."

I appear to be contradicting myself—one minute I am approving the demise of the old magazine form whose chief value lay in stimulating writing and the next minute bewailing the fact that the quality of English has deteriorated. I regret the implication that the changed newspapers may have resulted in a lower standard of writing, but if there is a fault, it is not that of the advisors or the institution but of the changed circumstances under which the present weekly papers are issued. The old news-literary magazine came out once a month or less frequently. The bulk of its literary content was the cream of the English classes—the richest product of the entire student body, material that was written and rewritten, corrected and revised. The rest of the material was produced by a comparatively small number—too small a number—with whom the faculty advisor or advisors could come in close contact during the month and advise in regard to the style of writing, and too, there was time for the articles to be pruned and trained along the godly path of circumspect English.

Now the *modus operandi* is radically different. If the paper comes out on Thursday, the bulk of the copy (and the amount of copy is much greater) is turned in by a large staff on Monday or Tuesday afternoons. The fifteen, twenty, thirty, or more reporters dump their copy in the copy basket and depart, for the advisor, usually just one, is far too busy to give much individual attention to

anybody. Now, if the copy is not to be too atrocious, the copy editors and faculty advisor must wield a deft pencil. The result is that the reporters learn little or nothing about improving their writing. Poor material is ground out every week, and some of it finds its way into the paper, to the great distress of the sanctimonious English teachers, the mistakes of whose pupils, like those of the doctor's, are buried—in the wastebasket.

The system is at fault, and only one remedy which may be a cure presents itself—that of the formulation of journalism classes in every school which has a school paper, this class or these classes to count as part of a teacher's class schedule. It may be unnecessary to add that a teacher should also be allotted time to look after the administrative details of the paper. Far be it from me to state all that can or may or should be done in a journalism course, but the teacher can give individual attention to the pupils and can eradicate many mistakes that have survived class instruction and the deluge of red ink during two, three, or four years of English. Of course, some class instruction would still be needed, but a teacher would have an opportunity to give far more individual aid in overcoming the mistakes of a pupil that are peculiar to him than is possible in an ordinary English class.

The prime purposes, then, of a journalism class are to direct the correct-writing practices and to build upon the urge to write, stimulated by the desire to have one's writings appear in the school paper. The aims and purposes of a journalism class and those of the school paper are not, therefore, synonymous. The purpose of the paper is to be the school house organ; the purpose of a journalism class is to encourage and teach better writing.

Journalism classes may be the only cure, but the creation of such classes in every school having a paper is a millennium not to be attained until the school officials recognize the potentialities of this course, until the course of study is made more flexible, and until a larger supply of trained teachers is available, for if journalism is put into the course of study and credit is given for it, then the state licensing body has the right to demand that teachers of this subject have proper training and experience.

At the present time the question is cropping up, shall the high-school paper be entirely a curricular activity or entirely extra-curricular. I cannot see how it can be all one or all the other. Certainly it should remain partly extra-curricular in nature in order that as many pupils as possible may participate in the administrative and executive work and get their share of training for leadership, but,

on the other hand, classroom work on the part of the writing staff is necessary if the quality of English is to be improved.

Now that the quality of the paper is being discussed may I ask: Have the twenty-five best papers in the United States really improved during the past three years? In other words, has the level of high-school papers risen? To answer my own question to my own satisfaction, I must give a negative, "no." After a dizzy climb from the lowlands to higher altitudes, the leaders have paused as if uncertain what to do next. The more lowly papers are still climbing after the leaders but when they have reached the present level, what will they do? In another ten years, when the better papers have no fresh blood to offer, will the papers as a whole suffer from inbreeding?

Frankly, much depends upon the contests that may be conducted by the press associations, local and national. Contests may keep papers from establishing a *New York Graphic* or a *Chicago Herald Examiner* type; on the other hand, they may keep a paper from developing into a *Christian Science Monitor* type, one well suited for high schools.

The annual has been thoroughly standardized, because it is subject to standardization, depending as it does for its appeal upon appearances since an annual is looked at and not read. To a certain extent, school papers have been standardized in appearance, in size, kind of type, and page make-up. But papers cannot be completely standardized, because they have for their final appeal written content, and it is in the field of writing that the improvement of the future lies. A beginning in encouraging better writing has been made by *Quill and Scroll* in whose contests emphasis has been placed upon better writing and creative ideas rather than on the paper as a whole. C. I. P. A. for a time did the same thing when it conducted contests for news stories, sports stories, editorial pages, front pages, and the like but it lacked office machinery to look after the work. What N. S. P. A. will do is yet to be seen. I hope that the blanket awards to papers as a whole will be supplemented by contests that will develop and build up smaller units in the papers.

Historically speaking, in the field of high-school publications, there were first the old news-literary magazines, for a half century using the same ideas, the same type dress, the same ways of doing things. Then came the discovery of the newspaper, followed by a tremendous expansion in size and number. And now comes a new phase in which the refinements of content will be the factor determining how a newspaper will rate. The problem of the future, then, lies not in making papers bigger but in making them better.

Junior High-School Principals

Evaluating Classroom Procedure

Douglas Waples[1]

The point of this paper may be expressed by the statement that supervisors and teachers must supplement customary methods of evaluation by other methods before they can evaluate the attainment of those objectives which represent the distinctive features of the junior high school. In developing this idea, I shall discuss three topics: in what respects customary methods of evaluation are misleading; what supplementary methods of evaluation are needed; and how the proposed methods of evaluation may be applied to the desired outcomes of any given course of study.

In pointing out certain deficiencies of customary methods, my purpose is to show how a zeal for purely objective measures may tend to discourage a teacher or supervisor from evaluating certain highly desirable outcomes of instruction simply because they cannot at present be evaluated objectively. And such outcomes, like pupils' interest in a subject, habits of study, and personal traits, are among the distinctive objectives of the junior high school. Such objectives should be evaluated directly by whatever methods there are, whether the methods are objective or not. Objective measures are reliable but are often very indirect.

There is an Austrian story about a blind beggar being led through a country lane by a small boy. He complained that he was very tired and thirsty. The little boy said, "Uncle, we are in the country. Perhaps I can get you a glass of milk."

The beggar said, "Ah, yes, milk! I have never tasted milk and I am blind. I have never seen milk. What is it like?"

The little boy said, "It is white."

"Ah, yes, but what is white?"

"Uncle," said the little boy, "the goose in the field is white."

"Ah, yes, but what is a goose?"

"A goose," said the little boy, "is a bird with a crooked neck."

"Ah," said the beggar, "but what is crooked?"

Then the little boy crooked his arm and said, "Look, uncle, take your hand, run it along my arm. That is crooked."

[1] University of Chicago.

The beggar ran his hand along the boy's arm and then he said, "Ah, now I understand. Now I know what milk is."

It seems to me that we often find a parallel in the use of objective evaluation of school work. I once knew a teacher who assumed from results of silent-reading tests that certain failures were caused by slow rate of reading when the pupils in question were found able to read an entire issue of *Snappy Stories* in one study period and escape detection at the same time. Stated in the abstract, the principle involved here is simply that comparisons are dangerous unless all important factors are taken into account. Test scores that apply to certain factors only may therefore distort the picture considerably.

An illustration of this danger may be taken from a recent study by which a principal undertook to find out what conditions were favorable for successful study in his high school. To determine these habits he compared the successful pupils with the failing pupils. He soon came to suspect that one cause of failure was attendance at parties and other social affairs. He thought that the failing pupils went to parties oftener than the superior students. As a matter of fact he found that the average successful pupil attended four to seven parties a month whereas the average failing student attended practically none; the reason being that the superior pupils were largely from the better homes, financially and socially, where parties were common. Hence, it is evident that poor scholarship in this school was not caused by excessive attendance at parties since the poor student did not attend parties.[2] It is equally probable that attending parties does not produce good scholarship, even though the good students attended many parties. The interrelationship of social, economic, hereditary, and psychological factors here is such that no final conclusions can be drawn from such comparisons. Yet, if the principal had found that the better students attended fewer parties, he would almost certainly have concluded that attending parties was responsible for poor scholarship.

Comparisons, however, may be highly useful to indicate factors which are worthy of further study by other methods, such as analysis, tests, and experiments. For example, in a recent study of causes of failure in a history class, the teacher wished to compare the pupils' reading ability with their knowledge of history. As far as she could tell from a simple, direct comparison, Frank was a good reader and good in history, Mary was a good reader and fair in history, John

[2] This and the three following illustrations are selected from *Research Methods and Teachers' Problems*, by Douglas Waples and R. W. Tyler, to be published in the fall of 1929.

was a poor reader and good in history, Ellen was a poor reader and good in history, and so on. She rather thought from her direct comparison of the data that reading ability had much to do with success in history, but she did not know how much.

Statistical methods of correlation provide comparisons which are objective and precise. In the illustration given, the teacher gave the pupils a reading test and also a test upon historical facts. When the two sets of test results were correlated, the coefficient proved to be $.78 + .06$. This showed a highly significant relationship, but, please note, it does not prove that ability in reading causes success in history. The correlation shows only that good readers are in general also good in history. A further study should then be made to see whether training in reading will improve success in history. Methods of correlation provide objective and precise techniques of comparison, and they should be used whenever objectivity and precision are more important than simplicity, but objectivity has nothing to do with the validity of the conclusions reached. A teacher's guess is sometimes valid when test results are wide of the particular point at issue.

A further example may illustrate the danger of confusing objective evidence with valid evidence. A plan of teaching study habits to college Freshmen had been developed and tried out. The success of the plan was then tested by comparing the percentage of students failing after having had training in study habits with the previous percentage of failures. The percentage was practically the same in both cases. A further inquiry revealed the fact that the college instructors had no absolute standards for success and failed the same proportion of each class. It would have been entirely possible for the entire student body to have improved considerably without at all reducing the percentage of failure. This is obviously no valid test of the success with which study habits were taught.

To illustrate the opposite extreme, in a group conference of teachers three different plans were advocated for eliminating pupils' errors in composition. In each case, the teacher proposing the plan said that he had tried it out and found it most effective. When asked for evidence, each teacher merely replied that he liked it better. In no case was a single item of evidence presented to support the teacher's judgment. This illustration is given not to suggest that there should not be three different "best" plans for eliminating pupils' errors in composition. Inasmuch as the pupils, school conditions, community conditions, specific errors, and teachers' characteristics are different, the most effective plans in one situation may not be as useful in another. However, it is highly significant that none of the teachers

could produce a single item of evidence by which to evaluate the plans proposed.

These examples suggest that valid evaluations of teaching procedures may require many kinds of data that are not obtainable by purely objective methods. For example, the interests of pupils, the presence or absence of intense emotional reactions in teacher and pupil, such traits as industry, honesty, carefulness, and the like are highly significant factors in the evaluation of teaching, but they are exceedingly difficult to measure objectively. Hence, the success of an experiment often needs to be determined by objective evidence supplemented by whatever other evidence is needed to complete the picture. Thus, the remedy for such misleading and inconclusive evaluations of school work would seem to consist in supplementing the standards or methods of research by standards and methods of evaluation that are better suited to the normal conditions of the schoolroom, to the research abilities of teachers and supervisors, and to the actual problems of the classroom teacher than purely objective methods of evaluation usually are.

If mistaken evaluations are due in part to the over-use of certain methods, the next step is logically to find out what other methods there are. A promising lead in this direction was developed last summer by M. R. Chauncey, professor of education at the Oklahoma Agricultural and Mechanical College. His procedure involves two assumptions. The first assumption is that the teaching processes to be evaluated can be defined in terms of the pupils' classroom activities which lead to the desired outcomes or objectives. He accordingly checked the list of pupils' classroom activities contained in the *Commonwealth Teacher Training Study*[3] against the North Central Association list of objectives for secondary schools.[4] The result is a list of thirty-seven activities of pupils checked to show which activities lead to the attainment of each objective. For example, such pupils' activities in the history class as "developing interests, motives, and appreciation," "taking part in group conferences," and "developing individual tendencies and abilities" are checked as leading to the objective of "acquiring fruitful knowledge of society through acquaintance with events, persons, movements, customs, and institutions which have determined social progress." A more intensive application of this procedure would consist in checking the learning activities

[3] Charters, W. W., and Waples, D. *Commonwealth Teacher Training Study*. Chicago: University of Chicago Press, 1929. pp. 166-71.

[4] "Report of the Committee on Standards for Use in the Reorganization of Secondary School Curricula," *North Central Association Quarterly*, 1:433:44, March, 1927.

obtained by analysis of each junior high-school subject against the desired outcomes of a given course. Yet, as it stands, the cross check shows plainly enough what pupils' activities need to be evaluated in order to determine what objectives are being realized.

The second assumption is that all available methods of evaluating these thirty-seven activities are contained in published reports of professional studies. Consequently a representative range of studies was analyzed into the data, sources, and techniques involved. From this analysis, fifteen fairly distinct techniques were found. Eight of these are particularly useful to teachers in evaluating pupils' learning activities. The eight types thus selected as most useful are recorded observation, recorded interviews, group conference, diaries, question-blanks, check-lists, rating scales, and written group tests. Each of these types, of course, represents many specific techniques. The eight techniques were accordingly checked against the pupils' activities which had previously been selected as contributing to the North Central Association objectives. The result is a list of the systematic methods by which supervisors and teachers may evaluate the activities that lead to the objectives. Hence the application of these methods is only one step removed from a direct evaluation of objectives.

The application of such methods to a specimen unit of junior high-school mathematics; namely, the unit of positive and negative numbers remains yet to be illustrated. Please note that the purpose of the study to be described is not merely to evaluate the pupils' work on the unit but also to find remedies for the weaknesses disclosed, without which the labor of evaluation is largely wasted. The problem consists of three parts: first, to define the difficulties met by ninth-grade pupils of the University of Chicago High School in learning the unit of positive and negative numbers; second, to determine the relative importance of the difficulties of each type; and third, to collect satisfactory solutions for the more important difficulties.

To indicate the character of the study in the time available I shall be able merely to mention the findings and to suggest the methods by which they were obtained. Taken together the findings constitute a thorough evaluation of the work in the ninth grade upon the one unit of positive and negative numbers. The findings represent six types, as follows:

1. The relative importance of the desired outcomes of the unit for the given grade was determined by judgments of authorities in the teaching of junior high-school mathematics. The judgments were obtained by means of a check list. The check list was prepared by recording in detail the pupils' classroom activities during their study elements.

2. The relative difficulty of various processes that represent elements of algebraic subtraction were studied. Fifty such elements were found by analyzing the problems assigned to the class. This analysis consisted in combining the various signs applied to the minuend and subtrahend with the different ratios between the quantities. The elements were then presented as a diagnostic test of ability to compute.
3. The relative difficulty of various technical terms used in directing pupils to subtract one number from another were formed. The terms were collected by analysis of textbooks and presented as a timed test. Relative difficulty was determined by the number of pupils who followed each direction correctly in the time allowed, thereby showing that the vocabulary was understood.
4. The relative familiarity of life situations used to illustrate the principle was investigated. The situations were evaluated by personal interview, and selected pupils were asked to explain what the situation had to do with positive and negative numbers. The number of interviews required to explain each situation correctly was used to determine the relative difficulty of the situations.
5. The relative importance of character traits as explaining pupil's failure in the unit was determined. The traits were obtained by interviewing other teachers of the failing pupils, then ranked according to the frequency with which each was mentioned in the deficiency reports by teachers upon the pupils concerned.
6. The relative merits of methods prepared by authorities for each of the learning difficulties found to be most serious for the given class were evaluated by experiment and then checked by a second application of the tests used to define the difficulty.

Thus, in all, only six type methods were used to obtain the data indicated; namely, analysis of text-material, observation, check-list, interview, written tests, and experiment. Since the study is soon to be published, I shall hope to have some criticism of these methods of evaluation as actually employed. In passing, I may say that they seem to me to represent methods which any interested supervisor or teacher may use in making valid evaluations.

In conclusion I submit for your consideration certain assumptions that seem to me to be justified by the data mentioned. In the first place, the scientific standards of objectivity, validity, and reliability are essential to the progress of education as a science. In evaluating school work, the importance of these standards depends upon the extent to which the learning and teaching processes are reduced to specific elements of subject-matter and are controlled by laboratory conditions.

Also, the normal conditions of the classroom differ from the standardized conditions of the laboratory to such a degree and in

respect to so many variable elements, that purely quantitative methods of evaluation are often impracticable or misleading when used by supervisors or teachers in service. Hence, objectivity must be sacrificed to simplicity when conditions require the evaluation of highly important elements to which objective tests do not directly apply, such as interest, appreciation, attitude, and out-of-school experience. When applied by the supervisor or teacher to a particular class or department, such methods as recorded observation, personal interview, check-list ratings, correspondence with experts, analysis, teachers' ratings, and informal testing may serve to obtain a more valid, and hence more useful, evaluation of particular phases of learning than more objective methods when used alone.

A primary value of the more subjective methods consist in the fact that they serve not only to define learning deficiencies and difficulties but also to provide teaching remedies since the evaluation is necessarily made with more direct reference to the specific objectives for the particular class and the particular course or unit of subject-matter. Research is urgently needed to define simple methods for three purposes: to evaluate results in terms of objectives, and to evaluate pupils' learning activities in terms of results. Widespread use of these systematic and practicable methods of evaluation by teachers and supervisors in service is no less important to the improvement of teaching than the results of scientific research. And it is in this stimulation and direction of teachers in their study of classroom problems that the supervisor makes his most important contribution to a science of teaching.

Essentially the method of evaluation here proposed consists in directing teachers to record in detail the outcomes desired for the given unit of instruction, to record the pupils' classroom learning activities, and then to check the activities against the desired outcomes. Having thus identified the learning activities which under favorable conditions contribute to each objective, we assume that we can measure the pupils' success in attaining the objective just in so far as we can measure or estimate their success in the important contributory activities. And we can estimate success in these activities by using systematic methods of observation, interview, and the like to supplement the customary written tests.

Evaluation of Extra-curricular Activities

THOMAS W. GOSLING[1]

THE TOTAL number of activities in which high-school pupils may participate is amazingly large. Fortunately, no individual is expected to participate in all of them. In spite of this limitation, one can scarcely escape the conclusion that extra-curricular activities threaten to overshadow in importance the regular work of the school. Some enthusiastic advocates of these activities have even gone so far as to predict in time the values to be derived from extra-curricular activities will outweigh the other values in school life.

There are other considerations to be taken into account in any just evaluation. The patterns of objectives set up by the subcommittee of the Commission on Unit Courses and Curricula is only one of several possible patterns. Consequently, even a most careful ranking of activities according to one pattern would not give a final evaluation according to all patterns. It would be interesting to know, for example, how the extra-curricular activities listed by Mr. Deam's committee would contribute to the objectives of secondary education as set forth by the committee which made its report in the second chapter of the *Sixth Yearbook of the Department of Superintendence*. In this report the general objectives of all education are stated as follows:

1. To promote the development of an understanding and an adequate evaluation of the self.
2. To promote the development of an understanding and an appreciation of the world of nature.
3. To promote the development of an understanding and an appreciation of organized society.
4. To promote the development of an appreciation of the force of law and of love that is operating universally.[2]

These objectives comprehend the whole of individual experience. They include the individual and his relationships to the world of nature, to organized society, and to Deity. In the schools we have talked about the world of nature and about organized society; we have said but little about the individual self and about the all-encompassing Deity. One of the weaknesses in our educational scheme is our failure to help the individual pupil to understand himself fully—to understand the workings of his own mind, the perils

[1] Superintendent of Schools, Akron.

[2] National Education Association. "The Development of the High School Curriculum," *Sixth Yearbook*, Department of Superintendence. Washington, D. C.: National Education Association, 1928. p. 51.

of sophistry, the strength of sound thinking, and the infinite possibilities in conscious personality. Perhaps extra-curricular activities need no other justification than their power of revealing the youth to himself. "What can the secondary school do to help the youth to know himself?" asks the author of "The Objectives of Secondary Education" in the Sixth Yearbook. The answer comes:

> By respecting him, it may teach him to respect himself; by setting an example of righteous living, it may teach him to lead the good life; by revealing to him the great achievements of the human mind in all ages, it may help him to discover the latent powers within himself; by having sympathy with his questioning, it may cultivate in him the true spirit of inquiry; by providing opportunities for wholesome and vigorous living, it may add to his experience and make his selfhood evident through activity.
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> The intimate connection between body and mind—so intimate that no one has been able wholly to separate the two—defines for the secondary school its double obligation. It must interpret the human body, dignify it, ennoble it, and make it beautiful. It must show the normal functionings of the mind and explain the ways by which it is possible to avoid abnormalities, deficiencies, and mental diseases. It must exalt the ancient ideal of balance and proportion whereby body and mind working harmoniously together may contribute to complete and highly effective living. All these counsels of perfection are of necessity expressed in general terms. The problem of the school is to achieve specific objectives by applying these general principles to the details of practice. Without guiding principles the work which is done from day to day is time-consuming work moving to no definite end. It does not and it cannot command the wholehearted devotion of aspiring youth.
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> The key to adjustment is activity. Understanding and appreciation which do not find expression in some form of adjustment are incomplete. Adjustment of the self to the world of nature involves on the physical side the observance of the laws of health. Sleep, rest, physical exercise, nutrition—are all governed by law and are all worthy of a place in human life. Most of these come within the purview of the secondary school, though only one, physical exercise, has received any large amount of attention.
>
> Mental health as well as physical health requires adjustment. The school which assists the pupil to derive help and strength from the great forces of physical nature, to find pleasure in changes of season, in vicissitudes of weather and of climate, and to confront the physical world unafraid has rendered service of a high order.[3]

In conclusion it remains only to say that we are not prepared to make a final evaluation of extra-curricular activities. We cannot judge them by their contributions to any single pattern of objectives.

[3] *Op. cit.*, pp. 51 ff.

We cannot eliminate them, but we can control and direct them. Most of us do not wish to reduce the curriculum to a subordinate place. We do wish, however, that our boys and girls in the secondary schools shall lead wholesome, happy, and profitable lives and that they shall extract from every experience, both curricular and extra-curricular, something that will contribute to their well-being. We have as yet no accurate means of measuring the relative values of various types of human experience. The method of consensus is the best available at the present time. In the absence of definite conclusions, the safest test to apply to any extra-curricular activity is to ask and to answer such questions about it as, What does this activity contribute to the pupil who engages in it? What is the relative importance of this activity and of some other in which he might engage? and What is the relative importance of this activity and of a curricular activity which it supplants? Careful answers to these questions will be helpful to both pupil and teacher until such time as scientific evaluation may be made.

Note: Addresses before the joint meeting with Senior High-School Principals are given on pages 291-96.

Kindergarten and Primary Teachers

The Spirit of the Jungle[1]

Dhan Gopal Mukerji[2]

In India the spirit of the jungle is significant and vital. One cannot touch it, one cannot really stroke it, yet it is present, as close as one's hands and fingers. The attitude toward animals which is quite different from that anywhere else, influences the awareness of this spirit.

People have the idea that animals act alike in all countries. Human beings do not act alike, and the behavior of animals in a community is very much like the behavior of the human beings. The same English-speaking people who are in Africa, writing books on African animals, are creating quite a different sort of books from the Englishmen who are writing in India on the animals of India.

Not one of the books on African animals is to me readable, because the animals have no souls. Apparently there are no spiritual legends in Africa about the animals. In India, a child is told not only that the tiger has a soul, the elephant has a soul, the cat has a soul, but that in time these souls will incarnate into human bodies. Such beliefs are not found in any books about Africa which I have read. In India, no matter which book you read, you will always find that the animal has a soul. Once you give the animal a soul, it is easy to tame him.

I have seen elephants taught. Of course it is really very, very unkind to catch them, but once the elephant is caught, you can see the mind of man operating, and the operation of the human spirit is so extraordinary that within fifteen days he is tamed. Within a month children may literally put their hands on his trunk, and he takes it like a philosopher. He knows, like Socrates, that he must take his hemlock. There is no use to fight any more. The taming of the elephant is recent in Africa; and even then it came from India.

The first important fact about the jungle is that if you are afraid, the animal will attack you. If you are not afraid, the animal will obey you. This general theory will be modified later. In catching

[1] Because of illness Mr. Mukerji was unable to revise the manuscript of this address, but it is printed in this unauthorized form by his permission.—Editor

[2] Lecturer from India.

elephants, I have noticed Indian trappers are not afraid, and this creates a psychic quality in them which gives them the confidence through which they work.

If you go to the jungle in the afternoon, you will find all the animals asleep except the elephants. They are walking about or standing in the warm sun with tufts of grass on their backs which they have taken from the ground. They go into the lakes and pull up stalks of lotus and eat them, and I have noticed the male elephant giving them to the female first, and, of course, the female devours a lot of lotus stalks.

As the day wears on, you will hear strange sounds breaking the silence. About five or six o'clock—a very dramatic moment—you hear few noises coming from below as you sit in the tree top. The day insects are going to sleep. Birds are sitting in the trees, no longer flying about. Squalls of green parrots tremble like emerald arrows in the sun.

Gradually the darkness rises like waters of stillness from the ground and goes up and up. As the night comes along, the upper voices, those of the birds and the monkeys are still. Suddenly, as the darkness covers the grass and you cannot see any more, you hear the booming of night insects—a remarkable orchestration, one here and one there. Then this scattering of sound is woven into a fabric like flaming colors on a shield of gold. Across the grass you hear a movement, everything stops; and sometimes, like a flash, you see the enormous yellow head of the tiger with eyes the color of a topaz. Then suddenly the eyes turn emerald; it is completely dark. The night has begun.

The movements of many animals are so delicate, you cannot hear them unless you are trained. As a child I was taught to listen to the wind. My teacher used to say, "Listen carefully. Can you tell on what tree the wind is blowing now?" You know the wind does not make the same noise on two trees. If it is a poplar, it is one sound; if it is a pine tree, it is another. So I had to learn to hear the sounds. As your ears become attuned, you can hear the sounds of the various animals as you sit in your tree.

I remember a noise like a scythe cutting in the grass. A herd of buffaloes were grazing, moving in a crescent shape; when I heard the sound of grass being cut, the buffaloes were moving. Then against that—nature is extremely fantastic in her arrangements—I remember a movement as if the grass were breathing and sighing, like a child asleep. When one hears that sound, one must stick to one's tree like bark. A python is moving. It makes a delicate sound,

probably the most delicate sound in nature. The snake presses against the grass, and then it rises and breathes again.

After that is hushed, an amusing noise begins. You hear a rustling against the saplings. An animal stops. Then another animal stops at the same place. Then the first animal moves to another spot, and the second one snaps the vines and follows. It is a doe which has an appointment with a stag. When he comes to the appointed place, she changes her mind. She goes to a second place, and he tries to follow. His antlers snap the vines in which they have been caught.

The next sound heard in the jungle is very gentle. It is the movement of squirrels going from branch to branch. Occasionally you hear a monkey talking in his sleep. And now it seems as if cathedrals of silence were moving under you. There is a whole herd of elephants moving under you and not a shadow of a sound. In the morning you may not even find footprints, they go so rapidly and so softly.

Suppose you came down from your tree top and sat on the floor of the jungle, what would happen? As long as you were not afraid, no animal would come near you. But the moment you became afraid, it would be different. One night there came to me, like rings on a hand, terrific flaming eyes stabbing the night. My master said, "You had better go up. They have come to investigate." So I went up to meditate.

I did it so long I did not know how much time had passed. Suddenly I felt something cold cross my hand. By the time I was aware of it a foot or more of the snake had gone across. I knew that a snake is very thin skinned and that when one is on your body you must pay no attention, because, if you get excited, it will feel it and may turn around and hit you. My hair stood up until it scratched and tickled, which is not pleasant, but I stayed there until he went home.

In seven or eight months, I got so I could sit anywhere and not frighten any animal. That was the reason for which I was taken to the jungle. This does not happen to all Indian children, but it does happen to quite a number, especially to those who live near the forest. There is no other way of overcoming terror of animals. Every nation knows it, but few nations teach it as we do in India.

Meditation is difficult to explain. Imagine somebody sitting in a place and saying, "I am infinite courage, because I am infinite repose, and because I am infinite repose, I am infinite intelligence; therefore, I will give forth infinite courage to whatever comes near

me." No matter what happens to you, you must think in terms of your being a reservoir of infinite courage and infinite repose.

Some time ago I was in the Swiss mountains and I saw some American children there. Two or three of them could not swim; and they stood on the edge of the lake and they trembled with terror. So I took hold of one little fellow and taught him how to relax every part of his body—legs, arms, hands, and torso. Then I used to put him to bed in his place in the tent and say, "Now imagine yourself relaxed and sinking into water, and, if you are relaxed, you will float." He gradually apprehended the philosophy I was trying to convey to him. One day somebody threw him into the water. He floated. He came to me and said, "I floated, sir." I said, "How did you do it?" He said, "I relaxed."

The remarkable thing is that I have found children in every country amenable to relaxation and meditation. It is the grown-ups who are the problem. They learn nothing. It is terrible how these people listen to me year after year and ask me what is meditation, but children can be taught very easily. Make it into a game. Most education is becoming a game. You tell a child, "Relax your hands." Then tell it to stick its foot out and lift its foot up and then relax. Gradually the foot will be so relaxed that the child will not know it. "Now, conceive of this in infinite repose." He will say, "How do you do it?" "What are you thinking of?" Well, he will say, "I am thinking of ice cream." We will say, "Can you imagine you are eating ice cream in a state of infinite repose?" He says, "Yes, I suppose I can." Then say, "Do this. Can you swim in infinite repose? Can you hit the other fellow in infinite repose?" And the child turns it into a game. And in a few months' time the child has attained repose.

This is why we have resented this western civilization so much: it does not teach repose. It teaches children to earn their living. It teaches them to go to work. It teaches them everything magnificent, but it does not teach them that the supreme energy is the energy of repose. That is the thing that distinguishes man from animal. The animal has not repose. He has an animal's sleepiness and an animal's wakefulness; but he has not that complete state of repose.

Now I want to take you to the jungle once more. You know I have always thought about your symbol of the eagle. The other day I was going across the street, and a policeman told me not to. I said, "Why not?" He said, "Didn't you know this was the greatest day in history?" I said, "I haven't the slightest idea what

it is." He said, "It is St. Patrick's birthday." I at once agreed with him; there is no other way of handling the Irish. As I stood there, one after another, the flags went by. And what interested me was the harp against a green cloth. Compare the symbol of that race with those of the others. What a contrast! The Germans have an eagle, the British have a lion, you have a bald-headed eagle, and the Russians have a bear. Now do you not think that is rather savage, utterly barbarous, to have animals as symbols of men, not animals at their most sublime, but animals as beasts of prey, showing claws and fangs and teeth? I saw that harp and I said, "Here is the most civilized people of them all." But, alas, they fight more than any other race!

You cannot judge the nations by their symbols. They are infinitely superior to their symbols. This did not come out altogether in *Gay Neck,* because that had to be interesting since it was a book. I had to leave out all its dull, recondite parts. The modern conspiracy that the written thing must be interesting may be a good spirit, but it is against the Holy Ghost. There is a certain dullness in life, and people who have the capacity of being bored should not come into an academy, because they are not in love with wisdom.

Going back to the eagle, I note that eagles are one of the few families of birds that never teach their children, or rather they have an amazing way of teaching them—they do not teach them at all. The children, the little brothers and sisters, are extremely ferocious. One time I went with my teacher to an eagles' eerie. Suddenly I was told to put my head under the trees, but before I did that, I heard some sort of an instrument, a string against the horizon, and the noise came out of a little thing as small as a sparrow; and then came another string, bass chords being touched this time; then came from this tremendously deeper tones; all the time the sparrow became larger and larger, like a horse on wings. It was an eagle going to its eerie!

There are three things in nature you can never forget. One is the noise of a python moving in the grass. If you ever hear it, you will not forget it. The second thing is interesting; it is the roar of a tiger in the dark of a night. The third is the wind whistling through the eagle's wings. If I could only tell you what it is! I shall not give you a figure of speech. It can be compared only with itself, this gigantic bird over your head and the harp tones that the wind draws through its feathers so terrific and solemn.

In the eagles' nest I found two children. These eagle children were extremely selfish, much more selfish than human children.

They ate greedily everything that the mother provided. Time passed, and the youngsters gradually grew. Their nest faced south toward the Indian Ocean, and the southern wind blew upon them in their nest. You would hear the wind, crooning sometimes, booming sometimes, across those hills. And the eagle children sat with the wind sculpturing their faces until the down began to change to feathers. Every evening and every sunrise I came there to see them grow.

The Himalayas are very still toward the dawning of the light. And against that darkness suddenly you feel as if a wing is being opened and shut with the softness of a fan in a lady's hand, very quaint and very gentle. Slowly a garnet star is lit in the distance, and the night stars are fading out. That garnet star is Mt. Everest. Then slowly the dawn breaks. Petal by petal Everest opens, and then it becomes a part of the chalice of the mountains in this sunrise. The sun leaps over it like a horse of flame.

At dawn we saw the eagle rise and float against the sun. He danced and shrieked his salutation. Thus the day began. Then he came down to the nest. The father of this brood was never seen, so the mother saluted the sun and was apparently teaching her children religion. All animals have an hour of adoration, eagles, monkeys, peacocks. If you watch them during sunrise and sunset, you will see that they do.

One day the mother did not come. The next day she did not come, nor the next. The children sat there facing the southern wind. At last, unable to bear their hunger, they quarreled, fought each other. But there was no food in that. Then one of the birds left its nest and went up to a higher peak. Then the other bird, apparently a female, because she looked smaller, decided not to be left alone in a nest where there was no food. She thought that by going up there with him they might get food together. So she left this hospitable place and went up. She was so frightened that when she went behind him she tried to step on the same piece of rock he was on. It was too small, and she pushed him off. He opened his wings. The wind came and hit him, and he went up and up. All of this time the insects and birds were singing below them. The moment the harping began in those great wings they were still as death. The second eagle got so homesick that she opened her wings out of sheer homesickness, and she too went up and up and up until they both disappeared. That is the education of an eagle.

Our American children and their education we deplore, because we always put things between them. You talk to your friends over

the telephone. You listen to the radio. No child tames an elephant and goes some place. Between life and the child there is put too much mechanism. You say, what right have I to resent it? Because I have a child exposed to this modern savagery of machinery. The child has not good penmanship, because he has a typewriter to rattle off what he wants. He cannot play the piano, because he has a phonograph. In the case of the eagle there is this tremendous conception. The wind is your enemy and your friend. Let it hit you from the beginning; then go out and master it.

I suppose all this that I have said ought to be tied into some sort of philosophy. Do you mind if I tell you about my mother who taught me this? She is the example of ignorance. My mother did not know how to read or write, and among her people it was felt that any girl who counted beyond a hundred was too educated to be a lady. My entire education was in the hands of my mother in the beginning. My father, who was intellectual in the modern sense of the word, would not teach us until we were beyond her aid. He said, "Your mother must educate you. She knows what is good for you."

The first thing our mother taught us was meditation. We are back again to that same meditation. It is the octopus of India. It devours everything. She got up at half past four and meditated until half past five. Then we would begin. We used to go to her to get our blessings. Here is what she used to say in Sanscrit: "You are our religion. You are our God. Through you we find God. Give us thy blessing, so that the day may begin propitiously."

In order to bless the children, she had to purify herself between half past four and half past five, the short time which she had free. It is a very grim life. I would not be a mother for anything in the world.

Then the children have to be taught other things. Let me tell you what she taught us in Sanscrit: "I am the golden thread of continuity. I am God. As the purse hangs on the string, so the whole world and the unseen worlds all hang on me. And I am running from the mineral into the plant, from the plant into the animal, from the animal into man. And beyond man I am the infinite silence. Look into a brother's eyes without hate or fear and you will find me." These things give you an idea of the wholeness of life.

The only mistake that the Hindu civilization has made is that it has insisted too much on subjectivity. And then comes the European civilization some two hundred years ago and almost eats it up. There are two kinds of truth. There may be many, many facets

of truth, but there are only two kinds. One is subjective and one is objective. In looking for truth, we have been preeminent as far as history goes. At the present moment we are hoping to synthesize the two. If we could keep modern science and make it go with mysticism, we would have a complete civilization. Modern science has destroyed mythology and mysticism. We need to synthesize these two. Hitherto our schools have been in the hands of foreigners, mostly of the British, our governing power, or the missionaries; in order to save our children from this education, we handed them over to their mothers for the first nine years, so that they were so well informed that modern western civilization would not make a dent on them.

Now we have understood at last that western civilization has a spiritual message, and if that could be synthesized with mysticism, we would produce a whole and a desirable human civilization. In this we need deeply your co-operation, but it is not a co-operation of money. Do not send money. It does no good. We do not want you to come over either. We want you to do this. Will you try out here a synthesis of meditation and scientific training? If you would only work at it a while, the results obtained in your laboratory would be beneficial to us.

So, ladies and gentlemen, I have talked to you about the spirit of the jungle. But what I really had in mind is to beg from you this co-operation, not the co-operation of things, but a co-operation of thoughts. And what the world is thinking today, if we think it long and soundly enough, will be the facts of tomorrow and make life richer and nobler throughout the world.

The Effect of Early Environment on Later Life[1]

Francis N. Maxfield[2]

The fact that no two adults are just alike is one of the interesting phenomena of common observation. We can recognize someone we know by his handwriting on an envelope, his step in the dark, his voice over the telephone, or by his style in an unsigned editorial. And yet, constant as many of these types of behavior remain in a given individual, we seldom find other individuals who react in just the same way.

[1] This paper appeared in full in the April and May, 1929, numbers of the *Ohio Teacher*.

[2] Ohio State University.

These observations on the relative constancy of behavior in one human being and on the differences in behavior among a number of human beings give rise to a number of very interesting problems in psychology. The character and personality of the adult have a certain rigidity that is not easily modified. Infancy and early childhood are characterized by a remarkable degree of plasticity.

This is not intended to be a discussion of environment versus heredity. There are definite limits to the effect of environment, but they may be compared to the limitations placed upon the portrait painter by the size of his canvas and the colors he has in his tubes. The infant is born, for example, with some tendency to articulate, but whether he learns to speak English or Chinese, or not to speak at all, depends on his social environment. Most of the differences in the reactions of the two sexes or of different racial groups are learned. A boy of English parentage brought up in an exclusively Chinese environment will be more like Chinese boys than like his English cousins.

This emphasis of the importance of early environment finds support at the present time in the work of two very different schools of psychology. The behaviorist, who gives little consideration to consciousness and has practically discarded the method of introspection, emphasizes the conditioned reflex and the determination of individual differences in reaction by the experiences of infancy and early childhood. The psychoanalysts, followers of Freud and Jung, make a great deal of consciousness and of the "subconscious" antecedents of behavior. They encourage introspection. Yet, they too emphasize the importance of the early impressions of childhood in determining later attitudes and reactions.

Where two schools of psychology differing so extremely in their points of view, methods, and fields of major interest agree on the significance of the early environment of the child in the determination of his character and personality, we must give serious weight to their conclusions. The psychoanalysts have obtained much of their evidence from their work in abnormal psychology and psychopathology, cases of mental disorder or disease. Others working in this field, however much they may challenge the theories of Freud and of Jung, generally agree with them that their case histories show the profound effect of early training and environment. They may disagree with the behaviorist as to how these early experiences become effective, but they do not question their significance.

The emotional and social reactions and attitudes of the child are probably more readily modified by training than the intelligence.

As far as our present measures indicate, the child's potentiality for intellectual development generally remains fairly constant after the third or fourth year of life. There is some evidence to indicate that this capacity may be increased before this age by favorable conditions of development. Even if this native capacity is constant no one can doubt that some conditions are favorable and others unfavorable to the learning process and to the development of intelligent behavior.

In any case, also, we may conclude that recent child psychology places a greater burden of responsibility upon parents and kindergarten teachers than ever before. It should encourage them, however, to realize that, where character and personality are favorably determined in infancy and early childhood, we may expect a continuance of this character and personality in adult life. Herein lies the hope of teacher and parent.

How Much Number Do Children Know?

B. R. Buckingham[1]

The topic with which I am concerned is of special importance to primary teachers. It raises the question, What habits, skills, and ideas may be assumed that children possess when they enter school? and it offers data, in answer to this question, with special reference to number. Similar questions may be raised in regard to pupils who are entering the second, third, and successive grades. What, we may ask, are the assumptions which may properly underlie our work at these levels of the elementary school? A systematic answer to any of these questions, however, must begin by taking account of the equipment of the child when he enters Grade I.

The conventional textbook in arithmetic is a book intended to be placed in the hands of third-grade pupils. It ordinarily begins with a gaudy picture, in which certain priggish children, impossibly clean in appearance, are occupied with hoops, marbles, dolls, or what not of the apparatus of play. The author first tells the children to look at the picture. Then he asks, "How many boys are there? How many girls are there? How many girls are sitting down? How many boys are sitting down? How many boys are standing up? How many girls are standing up? How many children are standing up? How many dolls are there? How many boys are playing marbles?"

Very likely the author next calls attention to the numbers from one to ten, and shows how they are printed, how they are written,

[1] Harvard University.

and how they are read. Here he is very careful and very complete. He is determined to be simple.

Within half a dozen pages, however, the scene abruptly changes. The child is now asked to solve problems involving the adding of one-place numbers and to complete abstract number facts, such as four and eight, six and three, five and nine, and so on.

A few more pages and the child is very likely in the throes of subtraction, solving problems and making concrete statements and abstract statements about such facts as seven less two are five, and eight from eleven are three, and fifteen minus nine are six.

One gets the impression from all this that there has been a marvelous rate of progress, and that within the span of twenty pages the child has progressed from telling how many girls there are in the picture to the solving of this typical problem: "Harry was four years old when his sister Julia went to school. Julia has been in school eight years. How old is Harry?"

The situation is analogous to that which used to obtain in reading in the days when the alphabet was first taught, followed by syllables of two letters and then by words of two and three letters.

One of the pages of an early reader of this sort has these sentences. "Is it for me to go up?" "No, it is for us to go"—now, you think I am going to say, "down," but "down" has more than three letters in it; so the word is "on!"

Other sentences in the same connection are: "My son, do no ill. Bad men go to —— the pit." What you were expecting has got four letters in it.

Now, in the same reading book, before thirty pages are passed, the child is brought in contact with sentences like these: "Vain persons are full of the allurements of dress." "The philosophical infidel cannot refer to him for authority." To the unthinking person there might thus appear to be marvelous progress in reading in the short space of thirty pages.

The conventional third-grade arithmetic can only be right at one end or the other of the material in the first score of pages. If there is anything educative in counting the three girls who have dolls in their hands, or the four boys who are playing marbles, if there is any learning taking place when the pupils are counting to twenty, or writing and reading the numbers to nine, then the problems and abstractions involving the combinations in addition and subtraction are quite beyond the powers of these pupils.

This, of course, raises the question of the assumptions underlying the course of study in arithmetic at the point where the textbook is

commonly begun. What do children know upon entering the third grade? Obviously, an answer to this question, even in the most general terms, depends upon the existence of a more or less standard environment. In particular, it means the identification of the school environment as it affects children before they enter the third grade.

Here, then, is our problem, the problem of the teaching of number in the kindergarten and in the first two grades. The American school is uncertain on this point. Some say teach number in the first grade as a regular prescription; others say wait until the second grade; and a few would wait until the third grade. A distinction is ordinarily made between what is called formal and informal teaching. It is impossible to be sure what this means. It is proper to ask whether there is any grade in which formal, in the sense of formalized, instruction is appropriate.

It is clear to me that if we can decide what we want our teachers to do and where we want them to begin to subject the child to number experiences, to the end that they may learn about quantitative matters, we shall then want to have the work at that point definitely provided for.

You and I know that if we want something done, we must plan for it and provide for it. We want our teachers to know what is expected in the way of learning numbers. We think they are entitled to this; and so do they. But whether they secure the desired effect by what we please to call formal or informal treatment is itself relatively immaterial.

The question of number learning in the early stages depends in part on the so-called law of readiness. Of course, there are those who contend that reading in the first grade is so important that number work should not be begun, even though the child may be ready for it, lest it interfere with reading. It is true that reading is of first importance, but it is entirely possible to make the reading of the first grade so continuous and unrelieved as to pass beyond the point of diminishing returns. Accordingly, the law of readiness offers an important, though not necessarily final, standard by which one may determine when to introduce the teaching of number. The main question in this connection is whether the child's maturity, his outlook upon life, and his interest in his environment are such as to make him need and desire the learning of number in order to make his life fuller and more meaningful.

A strong suggestion regarding the answer to this question is to be found in the extent to which children prior to entering school have already acquired a knowledge of number. If at the age of six, when

he enters school, the pupil has passed beyond the period of looking at the picture and counting the boys who are standing or telling the number of pink rabbits, if he has a functional grasp of small numbers, and if he can already enter into communication with other children and with adults on the basis of a common knowledge of small quantities, then the indications are that he is ready for our ministrations, and that to delay the teaching of number to him is to retard his growth.

What number then does the six-year-old child know when he enters the first grade? It is to the answer of this question that we shall now address ourselves.

During the summer of 1928, Miss Josephine MacLatchy, of the Ohio State Bureau of Educational Research, and I brought to completion an interview test, the purpose of which was to measure certain aspects of the number knowledge of young children. This examination was divided into six subtests, the first two of which concerned themselves with counting, the next two, with number concepts, and the last two, with number combinations.

It is painfully evident that this is not all that might be desired in testing the number abilities of young children. There is nothing here about comparison, nothing about quantitative vocabulary, nothing about fractions, nothing about measurement. The job, however, which the teacher had to do in giving the test as it stood was already exacting. More would have been an imposition. Some time, when occasion serves, richer data may be secured. Meanwhile I, for my part, am grateful for what I have received.

The returns upon which this report is based were obtained from the following cities and villages in Ohio: Akron, Canal Winchester, Cleveland Heights, Groveport, Hamilton, Hilliards, Kent, Lakewood, Lancaster, Lima, Marietta, New Albany, Portsmouth, Toledo, and Upper Arlington. Returns were likewise received from Port Arthur, Texas. In addition to the records from these cities and villages a few were also obtained from rural districts, and, since this report was drawn up, I have received very voluminous data from Cincinnati and a promise of data, somewhat differently derived but of an analogous character, from Cleveland.

All the testing was done before any number work had been taught. In nearly all cases the children were interviewed during the first two weeks of school. Only first-grade children who had entered school at the opening of the semester in September, 1928, were given these tests. Moreover, except in the case of Cincinnati, the teachers excluded from consideration all children except those whose

ages were between six and six and a half. At Cincinnati, owing to the desire of the local officials for complete returns for their own use, each first-grade teacher interviewed all her pupils. The Cincinnati returns, however, are not included in the report which I am rendering this afternoon, because complete tabulations have not yet been finished.

In the school districts other than Cincinnati, where the first-grade teachers selected their pupils on the basis of age the method of selection was as follows: The teacher first arranged all her pupils in alphabetical order, according to the last names. Then, beginning at the top of the list, she selected the first six pupils whose birthdays were between March 1 and September 1, 1922, and who were entering Grade I for the first time. These six pupils were the ones to be tested. If, however, the teacher was willing to test more than six pupils, she simply moved further down the list, taking each pupil, without skipping any names, who qualified as to date of birth and first entrance into Grade I as just described.

The first test called for rote counting by ones and by tens, each child being given two trials. The second test gave two trials in the counting of twenty small objects. They were put in front of the child, and he was required to count them, pointing to them or moving them with his hand as he did so.

The third test was a test in reproducing numbers. The teacher sitting at the table with the child opposite her and with fifteen or twenty small objects, such as cubes or beads or buttons, between them, asked such questions as this, "Give me five pennies." The fourth test required the identification and naming of numbers. The examiner, after throwing down in front of the child a certain number of small objects, asked questions in this form: "How many pennies are there here?"

The fifth test tested the addition combinations like five and two in verbal problems of this type, "If you had five marbles and bought two more, how many marbles would you have then?" Test six was likewise a test on combinations, but this time not in verbal problems but with objects.

The total number of children represented in the testing was 1,356, but the number of usable reports varied with different subtests from 1,121 to 1,356. This, as I said does not include the returns from Cincinnati.

Counting.—When the children are asked to do rote counting by ones, they being six years of age and not yet taught any number in school, 90 percent of them, assuming that these children are typical,

can count to ten, and 60 percent of them to 20. The median child can count to 27 or 28; and one child in eight can count to a hundred.

Rote counting by tens is more difficult, yet half of the children were able to understand this direction and to count as far as 40. One quarter of them went all the way to a hundred. A little over a quarter of them could not count by tens at all.

Rote counting may be one thing and counting of objects may be entirely different. It has been argued that the child may say, "one, two, three, four, five, six" without having any notion of what he is doing. It was as a partial check upon this that the test of counting objects was made.

The children were able to do this practically as well as they could count by rote. The average child did all that this test required and obtained a perfect grade upon it. The task was to count twenty objects; more than half of the children succeeded in doing it; and 75 percent of them counted objects at least as far as 14.

Here is an interesting confirmation of the appropriateness of items in the Binet test. You will recall that the counting of thirteen pennies is one of the items at the six-year level. Our results support this item and exhibit the sagacity of the authors of the test.

Number ideas.—The next test, as I have said, called for the reproduction of numbers, that is for a correct response to such questions as, "Give me five pennies." On each number the children were given three trials. In all our tests, however, where two or more trials were given, the trials were never consecutive. If a child counted by rote, he did not then do it over again, but he had at least one other test in between. The result was that these children, while they did somewhat better on their second and third trials, did not do conspicuously better.

In reproduction of numbers the following statements may be made. Practically all children were able to reproduce the numbers from one to four. On the number five, 85 percent succeeded at least once out of three trials, 70 percent succeeded twice out of three trials, while nearly two-thirds of the children succeeded every time. The numbers six and seven are about equally difficult and are appreciably, though not markedly, higher than five. Eighty percent of the children got six and seven right at least once, 65 percent at least twice, and 55 percent three times. The numbers eight and ten—we did not test nine—were likewise about equally difficult and perceptibly harder than six and seven. Yet even here three-fourths of the children succeeded at least once in giving the teacher the requested number of objects, and half of them were uniformly successful.

The reproduction of a number in answer to a question similar to "Give me five" by no means shows a complete concept of that number. To know five is much more than to be able to make up a group containing five objects.

There are various other factors that enter into the question, but one of them is the ability to identify an unnamed number and to name it. This is just a little harder than it is to reproduce numbers. Children did not succeed quite as well in the naming test as they did in the reproduction test. The difference was small, but it was consistent, being from four to six percent. Yet even here on the most difficult test of number concepts the children did too well to justify the infantilism of some of our courses of study and textbooks. Forty-two percent of them succeeded every time on the hardest number, namely, the number ten. An additional 28 percent showed that they were on the way to full competency by succeeding either once or twice. Thus a total of 70 percent of these children succeeded at least once on the harder type of test, and on the hardest number. Of course, the number of pupils who succeeded in naming the other numbers was greater.

A diagnosis at the beginning of the first grade is indicated here. Let us teach those that need to learn. The rest will not forget their knowledge of these numbers while we are doing so for the simple reason that they got them in life itself, and life itself will continue to take care of them. They are not a school product.

Combinations.—My final point has to do with number combinations, which I suppose are thought of as distinctly the work of the school. When these combinations were inserted in verbal problems, we found the children were able to give a pretty good account of themselves. How they were able to, how they "got that way," in other words, I, for my part, do not pretend to know.

The ten addition combinations used in this test ranged in difficulty by approximately equal steps from eleventh to eighty-first according to the determination by Knight and Behrens.[2] These combinations were put in verbal problems. The children responded to these verbal problems with percents correct out of 1,356 children varying from 72 percent correct for the combination five plus one to 22 percent correct for the combination four plus five. Some children got every combination right. In fact 91 of them did so. Very nearly half the children got five combinations right—the median was 4.7.

[2] Knight, F. B., and Behrens, M. S. *Learning of the 100 addition combinations and the 100 subtraction combinations.* New York: Longmans, Green, and Company, 1928. pp. 17-20.

The final test of the series presented ten addition combinations with objects. These combinations were selected on the basis of their difficulty. They ranked from tenth to eighty-eighth according to the findings of Knight and Behrens. The method of administering the test was as follows:

In presenting two plus four the examiner first lays down two cubes in front of the child and asks him how many there are. He may count them if he wishes. Then the two objects are concealed from his view. Four more of the same kind of objects are now shown to him, and he is asked how many there are. Then those four are likewise concealed along with the first two. Finally, the question is asked, "How many then are two and four?" You will notice that the objects are now out of sight. Hence we call this *invisible addition*.

Those children who were not able to give the right answer were then given a chance to give the right answer by seeing the objects. In other words, if a pupil could not say "six" in answer to this question, the screen was removed, and he was then asked the question, "Now, can you tell me how many two cubes and four cubes are?"

The children varied in their ability to do the *invisible* addition from two-thirds of them who got two and two right to one-third of them who got four plus six right. Half the children got five combinations correct (median 5.0).

As to the *visible* addition, on every combination more than half of these children who had failed on the invisible addition now succeeded. The total of those who were able to negotiate the combinations when presented with objects, either invisible or visible, on no combination amounted to less than 68 percent of the children, and varied upward from that figure as high as 89 percent for the easiest combination.

Thus, the 1,356 children who entered Grade I in these cities last September were able to give a surprisingly good account of themselves. As to how they got what they got, this report has nothing to say. Sixty percent of them had overcome what I should estimate to be quite 90 percent of the difficulty in counting, because they could count through twenty. Most of them could count equally as well with objects, and one quarter of the entire number knew the series of decades to one hundred. Approximately half of the children had uniform success in reproducing even the hardest numbers up to ten and an additional 25 percent were on the way, as shown by ability to answer correctly at least once out of the three trials. Quite 40 percent of the children were successful without exception on identifying and naming the hardest of the numbers. Here again an

additional 25 percent showed that ability in this function was already pretty well formed by succeeding once or twice in three trials.

Finally, on addition combinations ranging in difficulty up to the eighty-first in one test and to the eighty-eighth in another, these children showed a surprising ability, an ability which no school so far as I am aware assumes to exist. It is customary to teach all these combinations impartially to all of the children. And yet unless the children whom we have tested are far from typical, nearly 50 percent of six-year-olds already know half the combinations when they enter the first grade. A considerable number of them know all of the combinations used in this test, while, with the assistance of objects they may be expected to succeed to an even greater degree. In the light of these facts it is difficult for me to believe that children on entering Grade I are not "ready" for the teaching of number.

Latin

A Roman Gentleman and His Religion

Eugene Tavenner[1]

"Every student of religious history knows that a religious system is a complex growth, far more complex than would appear at first sight; that it is sure to contain relics of previous eras of human experience, embedded in the social strata as lifeless fossils."[2] One such survival in the later religious complex of the Roman, as will be found true of most other peoples, is magic, a subject which I have discussed elsewhere. Another survival of no less importance in all religions is superstition. Roman religion, then, if we accept the statement of Professor Fowler, which I have quoted above, will be found to consist in part of superstition; superstition which in the time of Cicero was still of great influence among the common people of the Italian peninsula, especially in the rural districts, though Cicero and his friends had long since freed themselves from such beliefs. It is my desire, therefore, to set before you this afternoon some of the essential religious beliefs of the common people of Italy in Cicero's day, and then to contrast therewith the beliefs of Cicero himself.

Let me first define religion as "the effective desire to be in right relation to the power manifesting itself in the universe";[3] and by superstition I mean exactly what the Romans understood by *superstitio;* namely, a belief which survives among the more conservative or less thoughful portion of a community after being rejected by the more progressive thinkers of the same community. Moreover, it should constantly be born in mind that when we speak of Roman religion we mean that set of religious ideas possessed by the inhabitants of Rome and contiguous territory before such ideas had been overlaid by Etruscan, Greek, and Oriental accretions. These early Romans were herdsmen and farmers, they had neither time nor inclination to speculate whence they came into this world, who made and governed this world, and where they were to go, if anywhere, after death. But they did know that their whole life depended not

[1] Washington University.

[2] Fowler, W. Ward. *Religious Experience of the Roman People.* London: Macmillan and Company, 1911. p. 24 ff.

[3] Howerth, Ira W. "What is Religion?" *International Journal of Ethics,* 13:205. January, 1903.

only upon the growth of their crops and the increase of their herds but also upon the proper conservation of these riches. In addition, these Roman herdsmen and farmers seem from the earliest times to have been convinced that in all their activities they had invisible associates, either helpful or harmful, in the persons of the gods; and that they would succeed only in so far as they maintained friendly relations with their invisible neighbors; that is, maintained the *pax deorum*.

Their conception of these gods was not anthropomorphic. Their imaginations had not been active enough to produce such a result. In consequence, there was no Roman mythology as we use that term when speaking of the Greeks. Their gods were rather what we should call *numina*, or hazy deifications of the powers of nature round about; and the ingenuity of the early Roman seems to have taken pride in assigning to every need of life its own presiding divinity. Even so, there were some gods that were more important and more universally worshipped than others. The whole system was animistic in its origin and never entirely lost those characteristics. At all events it met the needs of the early Italians in the vicinity of Rome.

I have said that these early Italians were herdsmen and farmers. As such they were much concerned with the points where their own estates met the estates of neighbors, the *compita*, as the Romans called them. Accordingly, we find the *Lares Compitales* among the earliest of Roman *numina*, not yet occupants of the house, but, like *terminus*, protectors of the boundaries of the farm. It was for the *lares* and to *terminus* that very ancient rites were celebrated, rites which Cicero, the city-dwelling philosopher, believed should be continued for the good effect they had upon the participants.

Then there was Pales. No one was quite certain whether Pales was a god or a goddess, so old was she. In Pales' honor the shepherds drove their sheep yearly through the purifying fire, and themselves leaped over the fire as it crackled with goodly omen, made more effective by medicine which the Vestal Virgins supplied. Or, if we come closer to the old farmer's house, we meet Venus, as yet goddess of gardens, and her faithful coadjutor, the deified scarecrow, Priapus, in all his repulsive ugliness.

As we pass from the garden into the house we enter, so to speak, through the body of Janus; for Janus was no less than the deified door. Those who delved with greater curiosity than depth of religious feeling could even tell you that Janus, door, was further subdivided into Forculus, the divinity who presided over the door, proper; Limentinus, the divinity of the *limen* or threshold; Cardea,

the guardian of hinges or *cardines*. You see how carefully the old Roman had guarded his principal avenue of ingress from evil.

Once inside the *atrium*, which of course was the only room of the primitive Roman house, the most prominent object to meet our gaze would be the hearth, where all the cooking was done. We who have never seen cooking done on the hearth of the oldest kitchens of this country, we who know of nothing other than a gas stove, cannot possibly appreciate the associations and deep emotions that cluster around a hearth, sole source of heat and food. If we knew that, we should have no difficulty in understanding why the worship of Vesta was at once one of the oldest and least-spoiled elements of Roman religion. But Vesta would be powerless as a preparer of food, did not the store-room gods, the *penates*, see to it that there was always an abundant supply.

Thus we see the primitive Roman herdsman depending upon his collaborating *numina* for everything. To be assured of their help he was in turn very punctilious in his services to them in prayer, vows, and sacrifice.[4]

There were, however, other divinities not resident upon his own farm—divinities just beyond, divinities of wider scope. With these, too, one must maintain the *pax deorum*. There was the god of wild life, just beyond the cultivated land, the god Mars, afterwards to develop into a great war god. There was Neptune, who presided over springs and rivulets; Portunus, god of harbors, and numberless other gods who on occasion must be kept in good humor. Above all, there was the Latin Jupiter, the great sky god, who could do so much to help or hinder crops. To him it behooved all to make sacrifice. It was he who carried within himself the germs of possible monotheism. It was he who became the god of the Latin federation. It was he who became the Jupiter Optimus Maximus of greatest Rome. But it was also he whose priest found still clinging to his person some of the most absurd taboos that ever indicated the great antiquity of an outworn religious ritual.[5]

These, then, were the gods of the early Romans, uncontaminated by later Greek and Oriental influences. They were frankly the gods of a country folk. They knew how to handle the problems of country life—to protect the crops from mildew, to insure abundant

[4] Examples of prayers are the famous prayer of the Arval Brethren offered to the *Dea Dia*, the prayer to Janus found in Cato, and the prayer of the falsely accused Vestal Virgin.

[5] Augury was probably practiced originally for the benefit of private families; but so far as concerns the historical period, augury was restricted to the state religion, the *ius divinum*.

increase in the herds. Then they exacted such sacrifices as herdsmen and farmers had to offer; their ritual was full of quaint performances of a mimetic and symbolic type, acts that meant much when kept in close touch with the place of their origin and the simple lives of their originators. But this Roman people was destined to change from farm to city, from poverty to riches, from simplicity to sophistication. What, then, would become of their religion? Could it adapt itself to the changing needs of a growing state?

No, for not only were its meaningful agricultural rites frozen stiff upon being transplanted to the city, but as Rome had grown, the religion of the family had gradually been codified into a state religion under the influence of the state priests, whose efforts were of such a character as to formalize the old shepherd-farmer ritual into a meaningless, city-made, very exacting priestly performance, of whose meanings even the priests were not very certain. As for the common man at Rome, he lost altogether his proud position whereby in ancient times, as *pater familias* on the farm, he acted as his own priest. From now on he must depend upon the official priest to keep the *pax deorum*, for only the priest knew how. And, though our evidence is slight, it seems quite likely that the common people of Cicero's time were quite willing to let the *pontifices* assume all responsibility for maintaining "right relations with the power visible in the universe" for the whole people.

Let us turn now from this picture of a religion highly retentive of outgrown superstitious detail, transplanted from rural simplicity to one of the most cosmopolitan and sophisticated capitals of all time, without power of adaptation, cultivated there by priests who had no knowledge of its original spirit, and acquiesced in by an ignorant populace. Let us ask ourselves what would be the attitude of a scholarly gentleman such as M. Tullius Cicero to such a religion and what were his ideas and beliefs about religion in general.

One often hears quoted in this connection a remark made to his wife, Terentia, in one of his letters written in exile. Thoroughly discouraged at the time, he exclaims: "I wish to see you and die in your embrace, since neither the gods, whom you have worshipped in most exemplary fashion, nor men, whom I have always served, have made any return of gratitude."[6] This was written in 58 B. C. and does seem to indicate that Cicero had left the worship of the gods to Terentia, but much depends upon the tone of voice with which such passages are read. To my mind Cicero seems to say in this passage no more than that Terentia had been much more punctilious

[6] Cic. *Ad. fam.* XIV, 4, 1.

than he in her acts of formal worship. During the same year and in the midst of the same discouragement we have the following words in a letter to his brother Quintus:

> Concerning this I should be praying to the gods, except for the fact that they have ceased to hear my prayers. But yet I do pray that they may be content with these boundless misfortunes of mine; misfortunes arising from no disgraceful crime committed, but which pain me exclusively because of the fact that the gravest punishment has been inflicted for the greatest benefactions.[7]

These seem to be the words of a man resigned to a hard fate, but not rebelling against the gods. Certainly he is not flippant in his method of speaking of the gods, as some would interpret his language to Terentia.

Nine years later, when life is more rosy, his tone is indeed light. Again he is writing to Terentia. He has just been suddenly relieved of a physical illness and is telling her of it. He writes: "In a twinkling I was so relieved that some god seems to have compounded the medicine. Please pay dutiful and reverent homage to that god for me, as is your custom."[8] The tone of the whole is playful, but that it is sacrilegious does not follow.

The truth is, as it seems to me, that Cicero was very religious throughout his whole life, but especially at the end, in the sense that he had an effective desire to be "in right relation with the Power visible in the universe." The same is true of Terentia; but the wife had no capacity for any religion other than the traditional religion of the Italian small folk, while her husband had found his religious satisfactions in Greek, mainly stoic, philosophy. That it was a religious experience I shall try to show later. If from his loftier concepts he sometimes speaks with no great respect of his wife's type of religion, we can well understand.

Even to traditional Roman religion Cicero was not entirely unresponsive. His commentary on the old laws of the Twelve Tables is quite sympathetic: "The law orders us to approach the gods with clean hearts." And again he writes: "For foreigners to worship their own gods or new gods or strange gods introduces confusion of service and ceremonies unknown to our priests. Therefore it is better to worship the gods accepted by our Fathers, seeing that they themselves obeyed this law." Furthermore, the Greek and Roman custom of building temples to the gods is to be commended—"to increase the spirit of worship towards the gods they wished the gods

[7] Cic. *Ad. Q. frat.* I, 3.
[8] Cic. *Ad. fam.* XIV, 7, 1.

to inhabit the same cities as did their worshippers." And again, "This last conception of religion is very useful to states." He continues:

> Nor is the worship of the Lares to be repudiated, handed down as it has been by our ancestors, and established both for master and for slave in open view of the farm and farmhouse. Now, seeing that antiquity came closest to the gods, preserving the rights of the household and forefathers amounts to cherishing the religion handed down to us, if one may say so, by the gods themselves.[9]

One could scarcely wish to find a finer example of a man whose intellectual pursuits had taken him far away from the religion of his boyhood, but who retained, even so, a vivid recollection of the old, simple faith in the ancestral gods.

In the foregoing quotations Cicero's views are practically identical with the traditional religious views of the ordinary Roman. For, according to this tradition, the business of men was to make sure that the gods who dwelt among them were kept on friendly terms by the performance of completely satisfactory ritualistic acts, by votive offerings, by prayers, and by sacrifices. On the other hand it was the business of the gods, as the Romans saw it: (1) to guarantee to the worshipper in return for his scrupulous practice of all the requirements of the *ius divinum* through duly appointed priests, comparative success and happiness in this life; (2) to furnish to properly trained interpreters indications of future events through the various types of divination; and (3) to reward the good in an afterlife. Of these blessings expected of the gods, the first two just mentioned were far more important to the Roman than the matter of a life after death.

That Cicero even in his mature years really besought the gods to give him certain blessings in return for a scrupulous performance of certain religious acts on his part cannot, I think, be shown. He seems definitely to have outgrown that simple Roman faith that bargained with its gods even when standing in awe before them. That Cicero did not share the popular belief in divination is quite clear; though here we detect a definite change in his attitude as the years pass. When he wrote the *De legibus* in 54 B.C., he could say in response to a question of Atticus:

> I think there is such a thing as divination, which the Greeks call μαντικη, and particularly that part of divination which concerns itself with the flight of birds and other signs in our system of augury. For if we concede that the gods exist, and that the world is governed by their thoughtful care, and that the same gods take thought for the human race,

[9] Cic. *De leg.* II, 10, 24; XI, 28.

and that it is possible for them to show us premonitory signs of coming events, I do not see why I should deny the existence of divination.[10]

Then after speaking favorably of the fact that Romulus had used augury at the foundation of Rome, according to tradition, Cicero continues:

But there is no doubt but that the training and the art of augurs has disappeared on account both of the passage of centuries and of neglect. Thus I agree neither with him who maintains that there never has been a science of augury in our augural college, nor with him who thinks that there is such a science now.

This is at least a frank admission from one of the college of augurs. It probably represents the whole truth. It amounts to saying that the old augural science, if it could be revived would be found to be useful and a dependable way of discovering the intentions of the gods toward men.

Ten years later Cicero took this matter up in greater detail after a much richer acquaintance with both Greek philosophy and the trials of life. In the *De divinatione* we find Quintus Cicero speaking as the champion of divination and bringing forth all the stoic arguments in support of his view. Marcus, on the contrary, after speaking of the necessity of great care in approaching so important a subject characterizes himself as one *qui esse divinationem nego*.[11] Moreover, when Quintus puts forth arguments very much like those used by Marcus ten years earlier, his brother rejoins:

You are defending the stronghold of the Stoics, Quintus, when you maintain as reciprocal propositions that if there is divination there are gods, and if there are gods there is divination. Propositions which are not so easily granted as you think. For nature has the power of indicating future events without the intervention of a god and even if there are gods, it is within range of possibility that they would not care to grant the gift of divination to the human race.[12]

It is unnecessary here to repeat the various arguments of M. Cicero against divination; but I cannot forego this delicious *reductio ad absurdum:*

Or do you think that if one man selects a calf for sacrifice he will find it lacking a head to its liver; whereas if another man selects the same calf he will find the head of the liver intact? Can there be such a sudden change to presence or absence of the head of the liver that the organs accommodate themselves to the fortunes of him who is sacrificing?[13]

[10] Cic. *De leg.* II, 13, 32-33.
[11] Cic. *Div.* I, 5-7.
[12] Cic. *Div.* I, 8-10.
[13] Cic. *Div.* II, 36.

However, that he did not think it wise to express such skepticism before the populace is shown by his words:

> To start with divination from entrails, a form of religious expression which I think ought carefully to be maintained for the sake of the commonwealth and the religion of the populace. But we are alone; we may therefore inquire into the truth without fear of being misunderstood, especially as I find myself skeptical about many things.[14]

He was neither the first nor the last to believe that a man who thinks deeply about religion cannot adopt exactly the same attitude toward the uninformed crowd as toward those of his own inner circle; nor is such a dual attitude necessarily dishonorable.

In rejecting divination, Cicero rejected what he and most thoughtful men since his time have considered of little value; for, as Cicero himself remarks, "It is very doubtful whether it is advantageous for a man to know the coming events of his life." But concerning the nature of the gods, or rather of the one god, concerning man's duty toward god and his fellowmen, concerning the rewards that await the good in a life after death—these questions aroused Cicero's deepest interest, and to their solution he devoted much of his time during the latter years of his life.

Immediately after the death of his dearly beloved and only daughter, Tullia, in March, 45 B. C., he seemed so stunned that philosophy seemed to give him no aid whatsoever. The letters written to Atticus for some time after the great affliction are filled with a desire to buy a suitable plot of ground and build thereon a *fanum* or shrine to the deified or semi-deified Tullia. It was by no means to be a tomb, but a real shrine. Just how his mind was working at this time he does not say, except to indicate his emotional collapse.

Later in that year, however, and throughout 44 B. C. he was exceedingly busy in philosophic research and writing, most of which was quite apparently from Greek sources, but containing nevertheless much of his own personality and experience. In rapid succession appeared at this time his works, *On Consolation*, *Tusculan Disputations*, *Academic Questions*, *On the Limits of Good and Evil*, *On the Nature of the Gods*, *On Divination*, *On Old Age*, *On Friendship*, *On Duties*.

Even as early as 54 B. C. he had apparently accepted the stoic doctrine of one supreme god and the kinship of man with god through their common endowment of reason. We read:

> This being provident, shrewd, manifold, keen, endowed with memory, full of reason and counsel, which we call man, has been begotten

[14] Cic. *Div.* II, 28.

under unusually glorious conditions by the supreme god. For he alone of all the numerous tribes of animals of varying natures is endowed with reason and power of thought, whereas the other animals are without such endowment. Since there is nothing better than reason either in man or in god, it follows that the bond of reason is the first bond that binds man to god. This whole world, therefore, should be looked upon as the one common state [*civitas*] of gods and of men.[15]

A little further he argues that "man is the only animal that has any knowledge of god, nor is there any race of men either so *mansueta* [gentle-refined] or so fierce as to fail to recognize what is befitting in a god."[16] This universal seeking after gods he concludes is merely a kind of remembrance by man of the place whence he came to earth, and an evidence of man's kinship with the gods.[17] Finally, with great conviction he writes:

> Let our citizens, then, be persuaded of this even from the beginning, that the gods are the masters and rulers of everything, and whatever is done is done by their command and according to their will. Moreover these same gods deserve well of man, and they behold each one's character, his deeds, his misdoings, his thoughts, his attitude toward religion, and they keep account both of the good and of the evil.[18]

Though Cicero varies his conception between monotheism and polytheism in the foregoing arguments it is apparent that to him the world is practically under the rule of one supreme god, and that he has an "effective desire to be in right relation" with that god.

In 54 B. C., then, he had clearly accepted the stoic doctrine of the god or gods who cared for men. But nowhere does he show in the *De legibus* any interest in the question of life after death. We possess, indeed, one colorless fragment from this work to the effect that death brings either something better than this life or nothing. Again in a letter of consolation to a friend who has lost a member of his family (52 B. C.) he writes: "There is nothing evil in death, for if we are capable of feeling after death that is to be thought immortality rather than death; but if all feeling is lost with death, then nothing should be considered misery which cannot be felt."[19] Even so late as the period immediately following Tullia's death Cicero seems to have been skeptical regarding the belief in life after death. In answer to a letter of consolation he writes: "And I assert it to be the highest compliment to philosophy that a man should not depend

[15] Cic. *De leg.* I, 7, 22-23.
[16] Cic. *De leg.* I, 8, 24.
[17] Cic. *De leg.* I, 8, 25.
[18] Cic. *De leg.* II, 7, 15.
[19] Cic. *Ad fam.* V, 16, 4.

upon externals, nor allow his calculations as to happiness to be governed by anything outside himself."[20] Even his belief in the governing gods seems to be tottering. In another letter of the same period we read: "I will never, while I live, let anything give me pain, so long as I have done nothing wrong; and if I cease to live I shall cease to have any sensation."[21] Moreover in 45 B. C. Cicero contemplated suicide, of which he says: "Another source of consolation . . . is that, if I am called upon to end my life . . . I shall then be beyond all consciousness."[22] Later in the same letter: "But since there is more evil in fear than in the thing itself which is feared, I cease to indulge in it, especially as that now hangs over me, in which there will not only be no pain, but also the end of all pain." In March, 45 B. C. he also writes: "Now the only plan seems to be to bear with resignation whatever occurs: especially as death ends all."[23] It is apparent, that neither in 54 B. C. nor at any time through March 45 B. C., was Cicero an ardent believer in life after death. At times he seems to be equally inclined to a doctrine of extinction and a belief in the possibility of a future life; but certainly his reaction after Tullia's death was in the direction of extinction.

This period of negation did not last long after the first shock of his daughter's death. In the *De consolatione* he hints that the deification of mortals in antiquity had been wise, and that the present generation should conserve such a custom.[24] Doubtless he was finding justification for the projected *fanum* to Tullia. Another fragment is much more to the point. It no longer favors the extinction theory regarding life after death. It reads:

> For the philosophers we have named have not thought that the same path to heaven lay open to all. For they have shown that those who were contaminated with vices and crimes are thrust down into the darkness and lie in slime [*caeno*], whereas the chaste, the pure, the unsullied, the incorrupt, those that are polished in the noble studies and arts, fly by a certain gentle and easy sweep to the gods.

What the setting of this fragment was we, of course, cannot say, but he seems already to have caught the theme of that noble strain with which he was to close the *De senectute*.

The subject was almost immediately to demand his more extended treatment in the Tusculan Disputations. Here, it is true, there are indications still of a philosophic balance of opinion between

[20] Cic. *Ad fam.* V, 13 (Shuckburgh's translation).
[21] Cic. *Ad fam.* VI, 3 (Shuckburgh's translation).
[22] Cic. *Ad fam.* VI, 4 (Shuckburgh's translation).
[23] Cic. *Ad fam.* VI, 21 (Shuckburgh's translation).
[24] Cic. *Ap. lact., Inst. div.* I, 15, 20.

the doctrine of the extinction of the soul and that of the soul's eternal life, but Cicero seems to me quite definitely to have concluded in favor of a life after death. In good Roman fashion he bases his view in part upon Roman tradition, maintaining that the unusual men of Italy and Greece would not have been deified if their contemporaries, the ancestors of the present generation, had not believed in the eternal nature of the soul.[25] Furthermore the *consensus nationum omnium* is used as an argument both for the existence of the gods and for the existence of the human soul after death, though we are not thereby justified in accepting the ideas of eternal bliss and eternal punishment imagined by the poets.[26] These latter he takes particular pains to disavow. But we cannot doubt his belief that his main source of philosophic light was Socrates. Or was it Plato?[27] For Socrates maintained, he reports

that there are two paths and a twofold course open to our souls as they leave our bodies. For in the case of those who have defiled themselves with human vices and have devoted themselves entirely to lusts of the flesh, to such an extent that blinded by these indulgences they have either besmirched their private reputations by their disgraceful deeds or have conceived inexpiable injuries [*fraudes*] to the state, for these there exists a certain lonely road [*devium iter*] cut off from the council of the gods; but for those who have kept themselves unspotted and chaste, who have yielded little to the seductions of the flesh, who have always turned away from such things, imitating the lives of the gods in their own human bodies; for these there lies open an easy return to those gods from whom they came. And so . . . as swans . . . seeing beforehand how much good there is in death die with a song of pleasure, so ought all good and philosophic persons to die.[28]

With this doctrine Cicero is in thorough agreement.

He does, it is true, swing back occasionally to a position of philosophic balance between the mortality and the immortality of the soul,[29] but I can see no reason to doubt that Cicero is expressing his final convictions in the words of Cato set forth in the *De senectute*, words that were penned just after the completion of the Tusculan Disputations. They are:

I think that the fathers of both of you, Scipio and Laelius, are living, and indeed living the only life that can properly be called living. . . . For the soul is heaven-born, let down and, so to speak, submerged into earthly bodies that there might be beings who should protect the earth, and by

[25] Cic. *Tusc. disp.* I, 12, 27-29.
[26] Cic. *Tusc. disp.* 1, 13-30; *Ibid.*, I, 14-15, 31-35.
[27] Cic. *Tusc. disp.* I, 46 iii.
[28] Cic. *Tusc. disp.* I, 30, 72-73. *Also* I, 31, 75.
[29] Cic. *Tusc. disp.* I, 49, 117; I, 49, 118.

contemplating the orderly arrangement of the heavenly bodies might imitate it in the measure and the constancy of their own lives.[30]

This doctrine Cato says he has gathered not only from his own thinking but also from the teachings of Pythagoras and Socrates.[31] And again the speech of Cyrus[32] though taken from Xenophon[33] may be taken as representing Cicero's own views. The dying king says:

> Think not, my dearly beloved sons, that when I have departed from you I shall be nowhere or non-existent. For even while I was with you, you did not see my soul, but from my deeds you knew that my soul was in my body. Therefore, believe that the same soul exists even though you shall not see it. . . . Never, indeed, could I ever be convinced that our souls live so long as they are in our mortal bodies, but die when they depart from those bodies; nor that the soul is dull when freed from our dull bodies, but rather when, freed from its relation with the body it begins to be pure and unsullied, then it is truly wise.[34]

Similar views are put forward by Cicero through the mouth of Laelius in the *De amicitia* published about the same time; and here again Cicero gives as his inspiration the *auctoritas antiquorum vel nostrorum maiorum*, the Pythagoreans, and Socrates.[35]

In the light of Cicero's acknowledgment of his threefold indebtedness to the ancient Romans, to Pythagoras, and to Socrates, we cannot agree with a recent biographer of Cicero that "in his efforts to arouse his countrymen to a nobler sense of civic duty and patriotism, Cicero did not hesitate to offer, without reserve, rewards in a higher life beyond the grave."[36] Nor do we agree entirely with the same biographer's next statement that

> armed with the new Stoic conception of a single, law-creating God, and with that logic in which the Stoics so excelled, he undertook to redefine the immortality of the soul, a conscious personal existence after death, in a civic heaven, if you please, with a distinctness and a convincing power which a pantheistic philosopher like Plato, not so armed, had never been able to impart to such thoughts.

Such a statement leaves out of account the fact that Cicero was fairly agnostic until laid low by grief for the death of Tullia. His reaction was that of a mystic. It is true that he had embraced Stoicism, and with it monotheistic ideas to some extent, but it had left

[30] Cic. *De sen.* XXI, 77-81.
[31] Plato, *Phaedo*, 72E-73B; *Phaedrus* 245C.
[32] Cic. *De sen.* XXII, 79-81.
[33] *Cyropaedia*, VIII, 7, 17-22.
[34] Cf. Cic. *Hortensius*, ap. Aug., *De trin.* XIV, 19.
[35] Cic. *De amicitia* IV, 13-14.
[36] Taylor, Hannis. *Cicero, a Sketch of His Life and Works.* Chicago: A. C. McClurg, 1918. p. XV.

him cold. The year 45-44 saw him engaged in feverish philosophic activity that he might think and work himself free from grief. Many days of contemplation, a mind unusually delicately adjusted to the ideas of spiritual religion, the mysticism of Pythagoras and Socrates—here we have the bases of Cicero's voluminous productions of this year. He and many Romans of his day had passed beyond the ancient time when men had "an effective desire to be in right relation" with the gods merely to insure present happiness and success. He must find answers to the great questions "why we are here, what we are, and what becomes of us after death."[37]

Cicero's triumph over personal grief through the acceptance of what we should call mystical religion was of incalculable value to the early Christian church. St. Jerome pored over his beloved Cicero until Christ came to him in a dream, during a critical illness at Antioch, and reproached him because he was more of a Ciceronian than a Christian; St. Augustine "went so far as to attribute the beginning of his conversion to Christianity to the study of Cicero's *Hortensius*."[38]

This concludes our sketch of Roman religion, or shall we say, of the religious beliefs of Cicero? I cannot close without drawing from the life of Cicero some clear deductions.

It must be apparent to all thinking persons that in every community there has to exist a natural conservatism with its attendant satisfaction and even self-laudation. In that same community there will also always exist natural progressivism with its attendant aggressiveness, sometimes accompanied with an assumption of mental superiority and destructive rather than constructive pugnaciousness.

Against both these forces M. Tullius Cicero fought a good fight. He tried to conserve all that was best in the traditional Roman religion, all that was not thoroughly inconsistent with his own state of mental growth and conviction. He sought patiently for new light from all sources. He was tactful, helpful, patient, and constructive in presenting his ideas to those less advanced, and by so doing won the encomium of Dante: "You would fancy sometimes it was not a pagan philosopher but a Christian apostle who was speaking."

[37] Fowler, *op. cit.*, p. 390.
[38] Taylor, *op. cit.*, p. XVII.

Underground Treasures in Rome

Frances M. Budd[1]

Under the marble floors of the Flavian Palace on the Palatine is the house of Augustus. Walls are painted in warm colors, floors are of black and white mosaic. Double flights of steps go down into a swimming pool. An ornamental fountain with marble facing occupies one side of a room open to the sky. Stucco medallions of the graceful beauty of cameo figures or of Wedgwood, white on yellow ground or white on blue ground, decorate ceilings.

Nero's Golden House, which reached from this region across to the Esquiline Hill, had a colonnade a mile long. Some ceilings were originally finished with ivory, some with overlaid designs of gold and mother-of-pearl. There were pipes for sprinkling perfume on guests. Baths had sea water and sulphur water. Here were treasures of sculpture, such as the Laocoön Group now in the Vatican Museum. Everything portable has long since been carried off, but in room after room of the Golden House are visible wall-paintings like those that inspired Raphael's famous frescoes.

Through the sinking of the roadbed of a railway outside the Porta Maggiore was found, in 1917, the enchantingly beautiful Underground Basilica. This edifice, cut into the native rock, has a vestibule with a skylight, and a hall with apse, nave, and aisles. The border of the mosaic floor looks as if bases for statues probably once stood in front of the immense pillars on each side of the nave. White walls and ceilings are covered with exquisite white stucco reliefs: Castor or Pollux carrying off a damsel; Ganymede being taken to heaven by the eagle; in a wedding scene a little attendant carrying the bride's train; a schoolroom scene with one boy about to do some mischief; athletic figures, street scenes, pigmies, cupids, panthers, Medusa masks, victories, scenes from classic mythology—all these bewilder the student who tries to learn the secret of this place. The perfection and grace of the decoration indicates workmanship of the Augustan age; because of the many representations of victories, contests, and seizures suggesting the victory and escape of the soul, it is called the meeting-place of a neo-Pythagorean cult.

Far beneath the present church of San Clemente is an ancient Roman house called the house of Clement. In it is a pagan temple of Mithra, whose worship, especially popular in the second and third centuries, included a curious initiation rite of baptism in the blood of a bull.

[1] Central High School, Canton.

Excavations in and near the Basilica of San Sebastiano show three strata of remains beneath the present level. One contains vestiges of a hostelry with a terrace, which probably supplied refreshment to pilgrims who came here. *Graffiti* in the form of names, phrases, and prayers scratched on the columns, benches, walls, and parapet of this terrace or pergola indicate that here was a *memoria* which reminded the faithful of Paul and Peter. The messages read something like this: "O Peter and Paul, bear us in mind, who have come here to take refreshment in your honor."

Glimpses into a Virgil Classroom

Alice D. Hare[1]

This paper gives an account of the work done in the Virgil classes at East High School, Columbus. The methods used are not new or unusual and have been employed by other teachers. *Nihil dictum quod non prius dictum.* However, it is hoped that the suggestions embodied in it may prove helpful to beginning teachers.

No one can teach the Aeneid well who does not love his subject and who is not eager to inspire his pupils with a like love for the great epic. I try to create a background for the poem. This is secured through some study of the life and age of Augustus, Virgil's friends and contemporaries, his home and family, character, etc. We discuss epic poetry, Homer and his influence on Virgil, and also speak briefly of the influence exerted by Lucretius and Catullus.

The study of Latin poetry is new to the student and so the peculiarities of Latin poetical structure and scansion are carefully taught. Many of the lines of the first six books are learned by heart. Interest is increased by assigning some definite project to each member of the class for individual research work. Among the projects assigned were the building and furnishing of a Roman house, dressing dolls, the story of the last six books of the Aeneid, character sketches of Aeneas and Dido, the story of Troy, and many others. A group of original poems was offered by one poetically inclined girl; collections of English poetry in which the classic influence is manifest were made—collections which are added to yearly. Instead of assigning projects, I sometimes call for collateral reading. The pupils are required to read at least three historical novels and one informational book. The book reviews are given outside of class on dates previously arranged.

[1] East High School, Columbus.

Last semester I used a contract method. To obtain an E—our highest grade—for the whole semester, the pupil had to fulfill the terms of the following contract in addition to his regular work:

1. Active membership in the Latin Club and willingness to promote its interests
2. Extra reading—Atalanta's Race from Ovid, or its equivalent
3. Good notebook
4. Read at least three historical novels
5. Read either Tenny Frank's *Biography of Virgil* or Mackail's *Virgil and His Meaning to the World of Today*
6. Memorize Tennyson's "Tribute to Virgil"

For the successful completion of a second program of work designated as Contract B—a mark of G or good was obtained. The content was the same as that for Contract A with the omission of the extra reading. The completion of Contract C—the regular assignment—earned the mark C.

I encourage my pupils to try their hand at metrical translations of portions of the Aeneid or to write an original poem dealing with some phase of the story and have received some commendable verse. After we have completed Book IV we discuss the time-worn question—"Was Aeneas' conduct toward Dido justified?" We do this often in the form of a debate. I also urge the pupils to dramatize Book IV and one year received a play good enough to produce.

The Latin Club is a valuable aid to teaching the Aeneid. Membership in our club is limited to the Virgil and Ovid pupils. Last year the club presented Schlicher's "Dido and Aeneas," a little play in Latin. The club has its own song, the words and music of which were written by one of its members.

Every student of the Aeneid must keep a notebook in which are reports on the different topics discussed during the whole year. These topics are illustrated by pictures, pen and ink drawings, water-color paintings, Latin and English quotations. Originality is encouraged and receives due credit.

The equipment of the Latin department, which is added to each year, is obtained by money raised annually at a Christmas sale at which candies, cakes, and other articles donated by the pupils are sold. Interest is encouraged but not at the expense of good work.

My pupils work and work hard, but many really seem to enjoy the Aeneid. If the pupils carry with them into later life only a modicum of the beauty, the patriotism, and spirituality of the poem, the teacher's work has not been in vain. *Forsan et haec olim meminisse iuvabit.*

Mathematics

Beginning Geometry with Similarity

H. C. Christofferson[1]

Since the time of Euclid mathematicians have begun their courses in geometry with congruence followed by the parallel theorems. Congruence is a term that is unfamiliar and uncommon in comparison with similarity.

All our conception of motion is the result of a series of similar and changing figures on the retina of the eye. We interpret an object as moving toward us or away from us according to whether the similar figures on the retina are increasing or decreasing in size. All scale drawings such as house plans, maps, and photographs involve similar figures. The whole of trigonometry as taught in the junior high school is based on similar figures. Easy proportions from similar figures have been used in computing an unknown height from lengths of shadows. In fact, if we believe in going from the known to the unknown in building our course in geometry, we had better give serious consideration to the use of similarity replacing congruence at the very beginning of the course.

Before attempting to explain how geometry may be begun by using similarity, due credit should be given for the origin of the idea. *The Teaching of Geometry in Schools,* a report of the Mathematical Association published by G. Bell and Sons, London, 1925, gives most excellent expression to this idea. T. Percey Nunn, whose work on the teaching of algebra and trigonometry is so well known to all mathematics teachers and who was on the Committee making the report, probably deserves much credit for the origin of the idea. Most of us, however, have felt for years that similarity is the most simple and useful part of geometry and have lamented its late use and meager allowance of time.

The traditional beginning for geometry is by means of camouflaged proofs of the congruency theorems and then, by means of these and the parallel postulate, the proofs of the parallel-line theorems. The use of similarity would throw out the congruence theorems from the beginning, and in place of the parallel postulate substitute a "principle of similarity" that "any figure can be reproduced

[1] Miami University.

anywhere on an enlarged or diminished scale." This would postulate at least one set of conditions which would suffice to make figures similar, for instance, "two triangles are similar if two angles of one equal respectively two angles of the other."

By means of this postulate of similarity it is evident that a wealth of material on similar triangles is at once available. Congruence itself would be but one special case of similarity when the ratio between the sides is one. Furthermore, by the use of this postulate in place of the parallel postulate, the parallel-line theorems can be proved and then the rest of plane geometry. Since this is the most difficult application of the new idea, let us proceed to prove these theorems by means of postulating similarity.

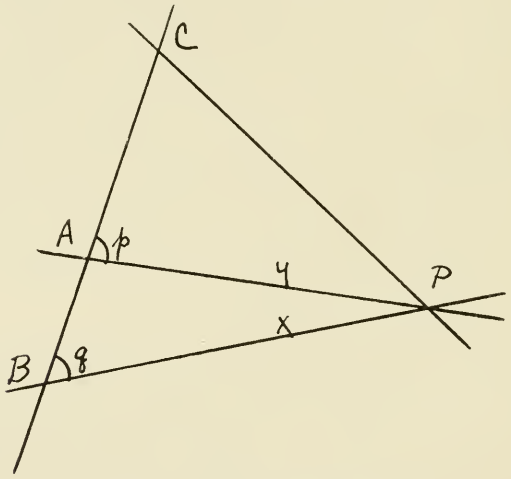

Fig. 1. To illustrate theorem

Theorem I—*If two lines cut a third line so that the corresponding angles are equal, the lines are parallel.*

Given: AY and BX cutting AB so that angle p = angle q.

To Prove: AY is parallel to BX.

Proof: AY and BX are either parallel or not parallel. If not parallel they will meet somewhere since they lie in the same plane. Let P represent the point at which they meet, and draw any line through P meeting AB at C.

Then triangles CPA and CPB would have angle C common and angle p equals angle q.

The triangles would then be similar and the angle CPA equal to angle CPB. This is impossible and consequently the lines cannot meet as they do in the figure if angle p equals angle q, and line AY is parallel to BX.

Theorem II—*If two parallel lines are cut by a third line, the corresponding angles are equal.*

Given: AX parallel to BY, cut by AB.

To Prove: Angle CAX = angle CBY.

Proof: The angles are either equal or unequal.

If unequal one must be greater than the other, and we will prove that in that case the lines would meet. Since the lines are given parallel, they cannot meet and consequently the assumption that the angles are unequal is impossible.

Assume angle CAX greater than CBY, then take any point S on AX and draw BS. Now compare angles CBS and CBY.

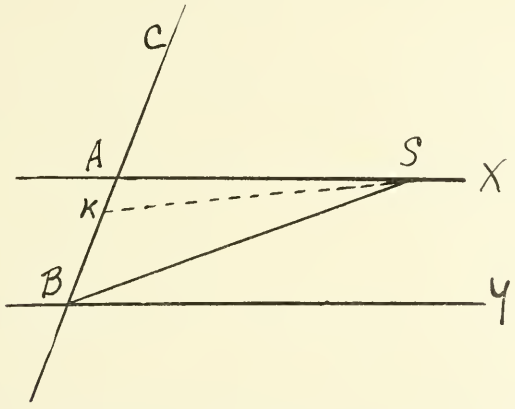

Fig. 2. To illustrate theorem

CBS is either greater than, equal to, or less than angle CBY. If greater, BY cuts AX between A and S, if equal BY cuts AX at S. If CBS is less than CBY, as indicated in the figure, BY will also meet AX unless angle CAX equals angle CBY.

Since CBS is less than CBY is less than CAS, there must be some point K between A and B such that angle CKS = angle CBY. That would make a triangle AKS, with two angles equal to two angles of the figure formed by AX, AB, and BY. AX and BY would then meet for either of the three possible relations between angles CBS and CBY, providing angle CAX is greater than CBY.

Similarily, if angle CAX were less than angle CBY it can be shown that AX and BY would meet on the other side of AB. Since AX and BY are given parallel, angles CAX and CBY cannot be unequal and must therefore be equal.

This shows the proof for the two parallel theorems by omitting the parallel postulate and the congruence theorems and using a

postulate of similarity. Even though this is not an American idea originally, it is destined to be of influence in the future and should merit some experimentation and thoughtful consideration by mathematics teachers.

Intuitive Geometry and Field Mathematics

Hale Pickett[1]

Intuitive geometry received recognition during the meeting of the International Mathematical Conference at Cambridge in 1912, when intuitive geometry was differentiated from demonstrative geometry. This meeting gave the subject a great impetus, and it has been taught extensively in the United States for the last ten years. It is distinctly a junior high-school subject, having spread with this movement and with the recent publication of the many junior high-school mathematics series.

The general shoving down of subjects from college to the senior high school and in turn to the junior high school demands that subjects be taught earlier. For example, calculus and trigonometry are taught in all of our progressive high schools. Demonstrative geometry, both plane and solid, are taught in the tenth year. This is only possible by teaching intuitive geometry in the seventh and eighth grades, followed by demonstrative geometry in the ninth year.

Let the child gradually form the concept of the properties of points, lines, surfaces, and spaces. Do not expect the child to assimilate a multitude of definitions, ideas, and processes, not to mention the logic demanded of him when demonstrative geometry is introduced. My thesis is: save the first eight weeks of work in the tenth year by teaching intuitive geometry in the junior high school and use this extra time in teaching both plane and solid geometry simultaneously in the tenth year. Why live in a space of three dimensions and do all of our reasoning in two dimensions? Intuitive geometry is not mensuration, but a broader subject which emphasizes the geometry of shape, size, and position.

Due to a general shoving down of subjects in our high schools and the crowded curricula, I contend that the concepts of lines, surfaces, and spaces should be taught first in the seventh and eighth years. As for teaching the subject: (1) make it real, selecting natural materials of local interest for motivation; (2) let the pupil do his own observing, describing, drawing, and thinking, remembering that

[1] Athens High School.

teaching is not telling; (3) never use a textbook as an approach to a new topic; and (4) consider definitions taboo, except as a final statement or as a summary of the experience.

Study the dominant forms as used by civilization and observe that the function of an object determines its form or shape. Symmetry is a new and a rapidly progressive topic. Watch it grow in art, architecture, and design.

Competition in this age is demanding accuracy in measurement. One must be efficient in both direct and indirect measurement, and use with facility such expressions as significant number, possible error, and percent of error to pose as an educated citizen of today. One should be able to read and translate the world's universal industrial language as seen in the blue print.

Closely related to this topic, I desire to call your attention to a unit of mathematics which I call field mathematics. I have several home-made instruments for teaching this unit. I think they help to motivate the work. They are the slide rule, plane table, angle mirror, sextant, transit, hypsometer, gravity protractor, and wire models.

The Class Period in Mathematics

E. R. Breslich[1]

The development of an effective technique of teaching high-school mathematics is comparatively recent. Thirty years ago it was commonly assumed that anybody with a bachelor's degree was prepared to teach mathematics. There are still many principals of high schools who hold this view today and think it entirely proper to assign classes in mathematics even to teachers whose special preparation has been in another subject. They expect little more of the teacher than to make lesson assignments, listen to recitations during the class period, and determine marks for grading.

Without underestimating the good that must come to the cause of education from the tremendous amount of time, effort, and money that is being spent on equipment, curricular construction, and reorganization of courses, one may safely claim that the highest efficiency of our schools will not be reached until we have teachers who are able to make every minute of the class period contribute toward the achievement of results. Unless the teacher has acquired a systematic technique of teaching, the class period is likely to be an ineffective mixture of teaching, measuring, drilling, testing, marking,

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reviewing, and assigning work. This lack of technique is perhaps the greatest source of waste of time which one observes in classes. What is needed is a procedure which introduces each activity at the proper time and which makes the purpose of each so apparent that it is as clearly conceived by the pupils as it is definite in the mind of the teacher. It is a mistake to assume this necessary only for the beginner, the inexperienced teacher. No teacher should step before his class without a definite plan of procedure.

The plan should not only provide for the activities to be carried on during the class period, but it should eliminate from it activities that can be taken care of before class time, such as distributing and collecting papers, putting the equipment in working order, looking after the physical conditions of the room, placing materials where they are most easily accessible, and taking attendance. By delegating these tasks to responsible pupils, the teacher will be left entirely free to devote his time to teaching activities.

In this article, these activities will be considered in the order in which they naturally follow each other in the teaching cycle from the beginning to the end of a teaching unit. The following incident illustrates the need for the first step which is usually to be taken at the beginning of a new course and frequently at the beginning of a new unit. A teacher was observed as she began the unit on quadrilaterals in a course in tenth-grade geometry. Apparently the lesson had been carefully planned, and the material was being presented in a creditable way. However, as the work proceeded, it became obvious that the class was losing interest. The pupils were getting restless. Noticing this, the teacher asked, "What seems to be the matter?" Promptly, one of the pupils answered, "We had all this before." "In that case," the teacher replied, "you tell me what you know about quadrilaterals." Instantly the situation changed. There was keen attention and interest as the pupils, one by one, told what they had learned about rectangles and parallelograms in the junior high school. Practically everything the teacher had planned to say in the instruction of the unit was brought out by the pupils. The teacher displayed good judgment in dropping the planned introductory talk as soon as she saw that the pupils were ready to recite. A serious mistake would have been made if she had insisted on presenting subject-matter with which the class happened to be familiar. Not only would time have been wasted, but the pupils would have developed a regrettable attitude toward the new unit.

To avoid similar mistakes, the first step in the teaching should be the administration of a carefully planned inventory test. It will

put the teacher in possession of valuable information which otherwise it might take weeks or days to ascertain. Such information makes teaching effective, enables the teacher to adapt the subject-matter to the level of the ability of the class, and identifies early those pupils who are likely to need special attention. It eliminates useless repetition of knowledge previously acquired which might easily become the cause of lack of interest. It is evident that inventory tests offer excellent opportunities for making connections between previous information and the new units, and, if necessary, for brief reviews of related materials. What has been said of geometry applies equally to algebra and to arithmetic. An arithmetical inventory test is especially valuable at the beginning of each year's work of the secondary school.

Several years ago the writer happened to visit a class in algebra at the first meeting of the course. There were about forty pupils in the class. The teacher, a man of many years of experience, conducted the work admirably. At the end of the class period a few minutes were left for questions. One girl raised her hand and asked, "Why should girls study algebra?" After a moment of reflection the teacher said, "You must study algebra because it trains your mind." Apparently not satisfied, the girl raised her hand again and asked, "But there are other subjects which we may study to train our minds; why should it be algebra?" This time the teacher answered, "You should study algebra because it is a useful subject and some day you may need it." Again the girl spoke: "Where does a girl ever use algebra?" The teacher now showed signs of irritation, for the class had begun to enjoy the situation and seemed to take the part of the girl against him. His reply was sharp and final: "You must study algebra because the board of education of the city demands it." No further questions were asked.

The argument was closed, but the class felt that no valid reason for the study of the subject had been given and that probably none existed. It was evident that some of the pupils would begin algebra with an attitude that was passive to say the least. This was rather unfortunate, since the whole difficulty could have been avoided if the teacher had started the work with a preview containing definite motives clearly recognized by pupils as worth while to them. The question, "Why should girls study algebra?" would not have been asked. With a grasp of purpose and meaning would have come good will, interest, attention, and a desire to learn.

It is a well-known fact that superior results are obtained when the pupil is genuinely interested in the work to be done. On the other hand, failure to see the meaning and purpose of a study may

result in lack of interest or even defiant opposition. It is commonly accepted that learning is most economical and lasting if the pupil is given a bird's-eye view of the whole course and of the various units before studying in detail the separate parts. Yet this principle seems to be rarely employed in the teaching of mathematics. For example, in geometry pupils are asked to study theorems, one at a time, without having their attention called to the relations which they have to each other and the unit as a whole. In algebra details and special cases are presented and studied, but their relations to the units are not shown. Some teachers establish the relations at the end of the unit by means of reviews and summaries, but only too frequently this is done only for the purpose of preparing the pupils for the final test. It is, of course, better than no summary or review, but its greatest value is not attained because it comes too late to be thoroughly assimilated. Hence, the second step in the teaching cycle is to show the relations between the various facts and principles which make up a unit before the pupil begins the detailed study of the unit.

The teacher should present these relations to the class by means of clear and concise statements which should not take much time. The talk should be brief and to the point. Only the larger principles should be sketched without attempt to establish proof, and care must be taken not to go too much into detail and not to be technical. Since this sketch gives the pupil his first view preliminary to the study of the unit, it is called a preview. It shows the pupil the road he is going to travel, and, at the same time, it aims to rouse his interest by supplying the motives for the study. The social and practical uses of mathematics serve as excellent motives for the study of the subject.

The next step in the teaching procedure is to direct the study of the unit. If the preceding steps have been taken, the teacher has before him a group of pupils whose interest in the work which is to follow has been aroused, who have been shown clearly the road they are going to travel, and whose previous experiences with and knowledge of the content of the new units have been ascertained. One way of beginning the assimilative study is to let the pupils turn to the textbook to read. All through the secondary period they need to be taught how to get the meaning from the page of the textbook in mathematics. This calls for slow, deliberate, and concentrated reading and re-reading of sentences and paragraphs, which is very different from the type of reading employed in most of the other high-school subjects, and certainly radically different from the superficial and hurried reading of stories and newspapers. Without special instruction in reading, most pupils will only get empty words from the

page and no thought. They will read a whole paragraph or page and then will not be able to recall what they have read. They soon fall behind in their work. Poor reading habits are often the sole cause of failure, as the following incident shows.

A teacher reported to the supervisor a boy as a hopeless failure in geometry. The supervisor summoned the pupil for a conference, and said, "Your teacher tells me that you have difficulty in mathematics. What seems to be the trouble?"

"I don't know," the pupil replied, "I don't understand any of it."

"You mean to say that you understand absolutely nothing in the course?"

"Yes. I can't make any sense of it."

"Are you studying?" the supervisor inquired, "Are you trying as you should?"

"Yes," answered the pupil, "I read as much as the others in the class, I work harder than most of them, but I guess I don't understand it so well as they do."

A book was secured, and the pupil was asked to read aloud the lesson for the next day. He read a theorem fluently and rapidly and was asked to stop with the question, "Do you understand that?"

"No," replied the pupil, "I don't know what it means."

The pupil was asked to read again from the beginning. He started to read as before but was stopped after the third word with the inquiry, "Do you understand that?"

"Yes. I do."

"Read on, please."

After reading a few words the pupil was again stopped and was asked, "Do you understand that?" Again he said that he understood what he had read. This method of reading and questioning was kept up until the end of the statement was reached. The pupil then said that he understood all of it. He continued to read the proof in the same manner, one statement at a time, always reflecting after each. When the end of the proof was reached, it was found that he understood all but two minor details which he was told to assume as true for the time being. This little lesson in reading was sufficient to put the pupil on the road to success, although, according to his own admission and his teacher's statement, he had been hopelessly lost in the course. The difficulty was not in the subject, in which no help was needed or given, but arose from the lack of good reading habits.

Even when pupils are able to study a unit by reading the textbook, however, it is often more economical for the teacher to present new processes and principles to be learned. Through the aid and

guidance of the instructor, the pupil is led to discover new facts and to learn new methods. This method is probably the most widely observed and used, but only the more capable instructors seem to be able to use it successfully. Most teachers commit the fatal error of falling into the lecture method, which attains good results only with the more gifted pupils. To the others, any lengthy discussion is of little or no value because they are not able to follow, since they have not developed the habit and power of good listening. Each of the two methods described has its place in teaching and studying. However, the major purpose of the first is to develop right reading habits and of the other to give instruction in ways of attacking and solving problems. The first is by far the more important, as it is the method of concentrated study.

Although the responsibility for assimilating the materials rests entirely on the pupil, the teacher has a responsibility fully as important. He must direct the pupil's studying, which may continue for a short time or for hours without interruption, and for which no definite time limits should be set. This is the time of supervised study. The teacher now directs and aids the pupils who need help. Occasionally all study may be interrupted to listen to a member of the class who gives a report on some of the reading, to allow for questions or brief discussion, and to avoid needless repetition by explaining matters to the class as a whole when it is found that several pupils have encountered the same difficulty. As simple as the supervision of directed study may seem, it often fails because the teacher has not worked out a satisfactory technique of conducting this type of class work and because the meaning of it is not always clear. Directed study means studying in the classroom, under the direction of the teacher, under physical and psychological conditions most favorable for studying, acquiring information independently, and attaining mastery of subject-matter.

It recognizes and provides for individual differences and aims to bring the pupil into close personal relationship with the teacher. The teacher's major task is therefore to assist and direct the pupils and to help him develop right study habits so that in time he may become intellectually independent. An unsatisfactory technique may easily destroy the values to be derived from directed study. Indeed, just the opposite may be attained of what is really intended. For example, instead of making the pupil intellectually independent, he may become altogether too dependent on the help of the teacher. Success of the method is endangered unless careful attention is paid to a number of points.

Directed study should not begin until evidence has shown that the assignment and principles are sufficiently understood to enable the pupils to work independently. If there are so many questions that the teacher cannot answer them conveniently, if too many pupils do not know how to proceed, this probably indicates that the class is not yet ready for study and that more teaching should be done.

Each pupil must be provided with the complete equipment needed in the work to be done. Otherwise, when directed study begins there will be interruptions and delays. Pupils should never be permitted to borrow eraser, compass, ruler, or protractor during the study period. Whenever materials are borrowed, two pupils are disturbed. In some cases this may become the cause of disorder and interfere with the work of the teacher whose undivided time and energy should go toward helping individuals.

The teacher must not become too much engrossed in the efforts of one pupil or of a few pupils while others waste time and the class suffers from inattention. The interests of the class cannot be subordinated to those of one or several pupils.

Pupils must not become dependent on the teacher, which is exactly the opposite of what directed study aims to accomplish. It is poor policy to make the same suggestions to a pupil day after day unless he is thereby stimulated to help himself. Directed study must arouse self-activity on the part of every member of the class. The study in the classroom should always resemble study at home where the pupil is alone with his books and with no one to appeal to for help. To be sure, in the classroom the teacher is present to direct and assist, but he is the one to decide when help should be given, not the pupil. The pupil must not sit idle, waiting for the teacher. He must be taught the habit of keeping himself profitably employed at all times.

Special devices must be worked out for giving help. If the pupil's difficulty is due to poor reading, he may be asked to read again more carefully, to reconstruct the sentence, or to look up the meaning of a difficult word. The easy way of telling him everything should be avoided. He must be given time to think. Only when it becomes apparent that with the best effort he cannot do the work, he deserves more help than a question or a suggestion.

Unusual pupils will be found even in classes formed on the basis of ability. Devices must be developed to take care of individual differences. The bright pupils may be allowed to proceed more rapidly or may be given a deeper course than the others. They may be given supplementary work when they have finished the assignment, or they

may be released from class work until the class as a whole has caught up with them. The resourceful teacher will have no difficulty in finding devices that will keep every pupil profitably employed.

Directed study, if conducted properly, is a greater physical strain on the teacher than the traditional recitation plan. The teacher who uses it as a period in which to dispose of minor routine tasks will accomplish nothing. The progress of every pupil has to be watched and kept in mind; everyone's needs have to be attended to. However, when it is found that everyone is working satisfactorily, the teacher may be seated at his desk, and the few pupils who need help may come to him, one at a time, for suggestions. At no time during the study period should a teacher busy himself with work other than that of directing pupils.

Many teachers and parents object to supervised study because the impression has been given that it means the elimination of all unsupervised study. This is erroneously concluded from certain published results which show the superiority of the directed-study plan over the traditional home work-recitation plan. Supervised study aims merely to overcome the disadvantages of a plan according to which day after day during the entire high-school period, lessons are assigned to pupils who do not know how to study and are therefore unable to do the work. Such a plan is unfair and wasteful, and cannot eventually lead to intellectual independence. There is considerable evidence to show that many high-school graduates do not attain correct study habits and that this is the principal cause of their failure to do college work.

Home work, to be effective, must not be given until concrete evidence is obtained that the pupil is prepared to do the work. Hence, the next step, is an exceedingly important factor in the teaching cycle. In general, it involves five steps. First, the pupils study the new method, principle, or process to be mastered. This may be done by letting them read the discussion in the text or by having teacher and pupils develop it together. Ample opportunity is offered for questions.

A clear exposition is then given by the teacher, in which the various steps in the complete process are briefly exhibited in the right form and best arrangement, and in which, without further interruption or explanation, it is shown how they apply in a particular problem or exercise. Further opportunity is then offered for questions.

Objective evidence must also be obtained regarding the pupils' understanding. This is easily done by sending the class to the board and assigning a problem to all pupils. If they work readily, they are

prepared for an assignment. If not, all work must stop and further teaching must be done.

When evidence is on hand that the pupils are able to do the work, a supervised-study assignment is made. This gives the teacher another opportunity to aid those individuals who need further help. Work may then be assigned to be done in class or at home. However, it is always best to start it in class.

The importance of taking all of the five steps in making an assignment for work to be done either in class or at home cannot be overemphasized. One of the major difficulties with home work is that the pupil fails to make the connection between the assignment and the particular problems of exercises to be worked. When these connections are established in the classroom, objections to assignment of home work will cease.

Another important class activity is to supply a sufficient amount of practice during the study of each unit. It must be planned for as carefully as all other activities, for it is a necessary experience in the learning process. Teachers frequently make the mistake of not furnishing enough practice. Different types of practice work should be employed for the various teaching situations, the purpose being to attain complete understanding of the principals and processes to be learned, and to help the individual to retain them permanently. In a few cases practice may be kept up until the process becomes automatic. At this place a word of warning is in order. There is as much danger from overdoing practice as from not furnishing enough. Comparatively few situations arise in secondary-school mathematics in which pupils are called upon to work at a high rate of speed. But at all times it is important that they should work carefully and accurately. Furthermore, practice should not be started too early. We must not confuse drill with teaching. Teaching and understanding must come first. We cannot teach by drill.

During the study of a unit it is necessary to keep up a continuous review of the essential parts. Reviews are often misdirected, especially when the old work is merely repeated in the old way. This type of review wastes time and is of little value. A review should always give a new and better view. It should not be confused with drilling or cramming. The fact is that in spite of all the review lessons that are assigned, including those that precede the day before a test, pupils in general do not know how to review, because they have never received definite instructions in ways of reviewing. A systematic review should consist of a logical and topical organization of the instructional materials of the unit. It starts with the unit and it

continues daily so that the pupil reaches the end of the unit with a complete, clear, and logical organization in mind.

A discussion of the teacher's activities during the class period would not be complete without a few words about testing. To most of the activities of the class period the teacher must apply tests to secure objective evidence to show the extent to which the pupil has succeeded. Thus, after the preview a test may be given by asking the pupils to write the preview in their own words. To those who fail in this test a second preview may then be given, after which they are tested again. Likewise, following each presentation, the whole class or a portion of the class is sent to the blackboard and a problem assigned to all pupils. If their work is satisfactory, if they give evidence that the work is understood, they are ready for an assignment. If not, further teaching, additional directions, or modifications, are necessary. To establish whether a class has assimilated the material in its fullest sense, oral tests consisting of numerous rapid-fire questions may be given during or at the close of the assimilation period. Briefly, every class period should be a test of understanding.

If, judging from all the evidence obtained, the teacher feels that the unit is thoroughly understood, then and only then the final written test may be given. It is common practice in testing to ask questions on assimilative material only. It is highly desirable to include also questions to test comprehension of the leading principles and of the pupil's power to apply these principles. Since grasp of these principles is more important than mastery of detail, tests should be constructed for measuring understanding and power.

If the test shows that some pupils have failed to attain real understanding of important facts and principles, further teaching becomes necessary. A second test should then be given. Those pupils who are not successful in the second test must continue to study until they can write a satisfactory paper. Although a pupil's work on a unit does not stop until all the essentials are thoroughly understood, there is no reason why he should not be allowed to go on to the following units while he is being retaught and retested on a previous unit.

Nothing has been said so far about the recitation although the traditional recitation is probably the most common class activity. To many teachers the recitation is simply the hearing of a lesson previously assigned, a device for finding out whether the pupil has prepared the lesson and for giving marks. If a lesson is found to be poorly prepared, it is assigned again; and sometimes a difficult lesson is assigned more than twice. When the pupil recites, he is fre-

quently interrupted by criticisms, directions, questions, and challenges by the teacher; and the recitation becomes a mixture of teaching, testing, measuring, and marking. It ceases to be an exercise in oral expression. The result is waste of time during the class period, and the real object of having the pupil recite, namely, to give him training in expressing himself orally to show what he really knows, is not attained. The fact should not be overlooked that the real purpose of the recitation is not teaching but training in oral expression. The recitation should be a floor talk. If the work of the unit has been well done, if the pupil has kept up a systematic daily review, he should have little difficulty to express himself. Before the pupil can recite, he must know something to talk about. It is evident that the recitation should come at the end of the unit.

The recitation may be conducted as follows: At the beginning of the class period the various topics, written on separate cards, are distributed to the pupils with the request that each, within the several minutes to be allowed for that purpose, prepare a talk on his topic. Frequently, topics given in the organization may be reworded to make suitable topics for the talk. The following illustrate: how angles are measured; what we have learned about the angles of a triangle; what we have learned about solving equations, etc. While the pupils are preparing the talks, all textbooks should be closed. After a few minutes the pupils are called upon, one by one, to give their talks before the class. Standing in front of the room, each addresses his classmates in a forceful and convincing way, in clear and concise statements, with well-constructed sentences. He has complete charge of the classroom. He makes free use of the blackboard, models, and other helpful devices, very much as the teacher does when he presents the unit to the class. The teacher refrains from interrupting, making only the most necessary comments. At the end of the recitation the speaker is subjected to cross-examination by his classmates and to criticisms by the teacher. When all floor talks have been given, the story of the unit will have been completely told. When there are not enough topics for all of the pupils in the class, the recitations may be written. This is followed by oral recitations, for which only some of the pupils are selected.

SUMMARY

The suggestions given in this paper will be summarized briefly. As far as possible, matters of routine should be taken care of outside of the class period. The class time should be devoted entirely to studying and teaching.

A definite teaching procedure should be followed providing for exploration, preview, motivation, presentation, assignment, supervised study, practice, review, organization, testing, and recitation. There should be a constant effort to develop effective methods of study.

Waste of time should be eliminated wherever possible. Thus, the exploration removes the loss of time caused by teaching what is already known to the pupil. The assignment is made only after objective evidence has shown that the pupils are prepared to do the required work. Supervised study assists the slow pupil to keep up with the class and teaches the bright pupil to be independent and to keep himself profitably employed at all times.

Oral and written practice should not be started too early. It is not to be confused with teaching. It should be such that all pupils are kept interested and active and it should not be carried to the point of fatigue.

Pupils must be taught to review and organize their work daily. If postponed to the end of the unit, reviews amount to little more than cramming for the final test and are therefore of little educational value.

Tests should give objective evidence of understanding and power as well as of information. If the results of a test are not satisfactory, more teaching should be done and a second test given. The process of retesting and reteaching should continue until it is shown that the pupil thoroughly understands those facts and principles which are essential for further successful progress in the course. The recitation, which is ordinarily the greatest source of loss of time, should come after evidence has shown that the pupils are sufficiently prepared to recite. One of its major aims is to give real training in oral expression.

Modern Language

Testing Achievement in Modern Languages

Algernon Coleman[1]

All examinations in academic subjects are intended to test achievement. We endeavor to make sixth-semester examinations in a modern language more difficult than those for fourth semester and would be greatly surprised if fourth-semester pupils made passing grades on tests for sixth-semester classes. Since we rarely, if ever, submit this possibility to a trial, we continue tranquilly on our way, persuaded that at given periods of the day we have before us classes representing the third-semester or the fourth-semester stages in French or Spanish, according to the way classes are designated in the daily program of recitation. There is no way of comparing examinations to make sure that a given set of questions is appropriate for a given semester- or year-level as distinguished from lower or higher stages, nor is there evidence to show whether a fourth-semester test given in January, 1928, is equivalent in difficulty to a fourth-semester test given in January, 1929. We do not know whether passing a fifth-semester test in June represents a higher degree of accomplishment than when the same group passed a fourth-semester test at the end of the preceding semester.

All teachers have had enough experience of the judgments expressed by their classes when confronted by examinations to be aware that we are too often the very poorest judges of the suitability of a given set of questions for a given group of pupils. A little reflection will force us to admit that we cannot foresee how a given set of questions will operate. We are often unable to say whether a pupil's score would classify him in the second or in the third semester. One may safely predict that, if in a given school, a comprehensive test made up of questions set in the different semester examinations, were administered to all the pupils in the language concerned beginning with those who were completing their first semester, and if the answers were objectively scored, the results would be surprising. In many cases the classification by semesters would be definitely called into question. Pupils in any semester-group after the second would be found to range from one or two semesters lower to one or two

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semesters higher than their classification, and even whole classes might be found to belong in a different semester-group than the one to which they had been assigned. It would be discovered that existing classifications of pupils in secondary schools and junior colleges seem to have been made largely by chance rather than on the basis of their progress toward the objectives of modern-language instruction.

This is equivalent to saying that there exist no trustworthy standards of classifying modern-language pupils—nor of pupils in any other continuing subject that has been carefully investigated. Furthermore, from school to school, and from year to year in the same school, conditions vary so that to call a class French IV is to indicate practically nothing with respect to the knowledge of the language that has been attained by the pupils. Current examination practices then will never reveal just how bad the situation really is, and will never enable us to improve it materially.

Numerous investigations of an objective character have established the low reliability of teachers' marks, even on such a subject as geometry. This is one of the commonplaces of the indictment against existing methods of measuring attainment. B. D. Wood found that in New York the pupils in physics who came up for the Regents' examinations were just as badly classified as the modern-language pupils.[2] The results of the testing of Latin pupils by the Classical Committee have never been published, but it is certain that a similar state of affairs prevails there. The variability in pupils' abilities in background and in industry is an important factor in the situation. If all the A pupils from ten sections of beginners in a modern language in a given school were compared, even they would spread out on any grading scale adopted, but the more variable the systems of marking on which the A grades were based, the wider the subsequent range of distribution would prove. It is not surprising therefore that the totally undifferentiated groups with which we usually deal spread out so widely that the most conspicuous general characteristic of a chart derived from an objective and uniform testing campaign is the enormous overlapping at every stage of advancement.[3]

The arguments in favor of a new and improved method of evaluating attainment in a given subject have often been presented. For modern languages Wood presents them trenchantly in his study.

[2] Wood, Ben. D. *New York Experiments with New-Type Modern Language Tests.* New York: Macmillan Company, 1927. p. 150 ff.

[3] Henmon, V. A. C. *Achievement Tests in Modern Foreign Languages.* New York: Macmillan Company, 1929. pp. 132-44, Figures 3 to 14; pp. 149-72, Figures 15 to 38.

Henmon's important volume, *Achievement Tests in Modern Foreign Languages,* provides equally convincing evidence. Ruch and Stoddard treat the question in a more general way in their book, *Tests and Measurements in High School Instruction.* These are only a few of the recent publications which bear rather directly upon the modern language problem. The case against our present examinations may be formulated briefly. They are, first, subjected to no criteria for determining consistency in difficulty. There is no evidence that the hurdles to be cleared are of the same relative height from semester to semester and from school to school. They are not so constructed that pupils of different semester levels may be compared directly with one another or with a local or general standard. They are not scorable in a uniform manner so that a grade of 85 always corresponds arithmetically to other grades of 85 and always represents on a given examination a higher degree of attainment than a grade of 80.

Examinations of the essay type are not reliable; that is, it cannot be shown that they consistently measure the same kind of knowledge and in the same way.[4] Wood reports for the old-type Regents' examinations a reliability of only .788 as against .955 for the new-type in one class; and an average for the old type of .70 against .94 for the new.

They usually embrace a narrow range of material that has been studied within a given period of weeks or months, and hence test the learning of a given stint rather than attainment in the language. They thus depend for their validity on the contents of certain pages of a textbook rather than on any accepted standard of what pupils should be able to do at given stages.

With such measuring instruments as our sole dependence no experimentation is really possible, whether for the purpose of evaluating the effectiveness of a method or of a teacher or of a set of textbooks or of a school. It will remain impossible to reach precise conclusions, for example, on the relative value of phonetic training or of free composition versus translation into the foreign language, or of intensive grammar study, or of oral practice in a two-year course, or of intensive reading, or on any one of the half-dozen other well-known and important subjects of discussion in the field of modern languages. Our usual practice of measuring achievement by

[4] Ford (see *Modern Language Instruction in Canada.* Toronto, Ontario: University of Toronto, 1929. Vol. III, p. 825) concludes, after a study of the remarkably high reliability index of the old-type Ontario matriculation examinations, that the American Council battery of tests requiring 80 minutes for administration gave as reliable results as two matriculation examinations taking four times as long.

time spent and ground covered is the natural result of our implicit acceptance of the fact that our examinations are not significant as measures of what has been accomplished. The assertions contained in the foregoing indictment do not, of course, rest on a priori grounds alone. Of the second-, third-, and fourth-year modern-language pupils who submitted themselves for the Regents' examinations in New York State in 1925, Wood has shown that the scores of about 60 percent were nearer to the norms for some other year-grade than for their own. As this inquiry involved pupils from schools all over the state, the results cannot be a matter of accident or of chance. The testing done by the Committee on Investigation of the Modern Foreign Language Study, and reported by Henmon established the fact that this situation is nation-wide and that a similar state of affairs prevails in modern-language classes in Canada and in England.[5]

If we now turn our attention to another aspect of the question and inquire by what signs we shall recognize more effective testing instruments, we are led to formulate statements like those which follow. Modern-language examinations should enable us to judge accurately the point at which the students have arrived in the attainment of the accepted aims of the course. In doing this, they will also disclose the amount of progress made by each class group and each member of the group toward the abilities which teachers are endeavoring to develop. In general we may assume that these are, in most cases, the ability, in various degrees:

To read the language
To understand the language when spoken with good pronunciation
To pronounce the language in a manner intelligible to a native
To use the language orally so as to be understood by a native
To write the language in conformity with accepted usage
To form judgments about the country and the people on the basis of the knowledge gained through study of the language

In progressing toward these goals, pupils must gain a knowledge of the structure of the language, must become familiar with the correspondence between spelling and sounds, must acquire a stock of vocabulary and of idiomatic expressions, and must have their ears

[5] Testing results in Canada show that about 36 percent of French pupils are misplaced by a year (Ford, *op. cit.*, Vol. II, p. 687). In the United States 50 percent are misplaced by a semester or more, and 26 percent by a school year. The estimated average misplacement by one year in English schools is 44 percent. (*Ibid.*, p. 709).

trained to the point where they fuse sound symbols with the concepts for which these stand in the mind of a native. Consequently, it should be possible to test pupils for their progress in these directions, and for this purpose it is necessary to apply tests that explore attainment in these six directions. If skill in translating into and from the foreign language is placed in the list of aims, two additional tests will be needed. If it were established that these various linguistic abilities and skills correlate quite closely, it would be possible and desirable to reduce the number of units in the testing battery. All the evidence available indicates that the number of units must be increased rather than diminished if the inventory is to be complete.[6]

The American Council tests comprise four units: vocabulary, grammar, reading, and composition. Other units designed to test attainment in aural comprehension, in oral facility, in knowledge of idioms, and in acquaintance with the foreign country are greatly needed, especially for experimental purposes where a highly refined procedure is indicated. It is true that Professor Ford finds that the four written units in the American Council tests provide, when compared with teachers' grades in oral ability, a useful, although indirect, index of oral attainment, but one may well raise the question whether this conclusion does not point rather to the unreliability of grades on oral attainment than to a really high correlation between oral attainment and scores on the written test.[7] The Ford data appear to show that under existing conditions the written test is about as good an index of oral ability as the grades on oral ability given by teachers, for these grades are based apparently on attainment in grammar rather than on attainment in speaking.

Many knotty problems of principle and of detail present themselves in connection with the construction of such a battery of tests. However, the task presents no insuperable difficulties except in the case of testing oral ability. It would be relatively easy to improve still further the present units of the American Council tests, add others that deal wit ha knowledge of idioms and cultural background, and to develop further the tests of aural ability that are already under way. By what criteria must the testing batteries and the component units be judged? Obviously, by the same criteria according to which the current type of modern-language examinations stands condemned.

The measuring instruments must be valid; that is, they must actually test students for the knowledge and skills that constitute

[6] Henmon, *op. cit.*, p. 92.
[7] Ford, *op. cit.*, Vol. II, p. 837 ff.

the real goals of the work done by teacher and by classes. Assuming that teacher and class have been working for a knowledge of the commonest words, the commonest idioms, the most useful grammatical forms and constructions, the most significant facts and judgments relating to the foreign country as these contribute to ability to read, to speak, and to write, examinations should reveal the progress made in the acquisition of the basic knowledge and the development of the desired skills. The subject-matter of the course, if we assume that it has been wisely chosen, must be the source of the testing material, and the technique of presentation must be such as to accomplish the end in view. It is probable, for example, that questions involving rote knowledge of unusual forms and exceptional syntactical combinations do not reveal much about writing ability appropriate to the early stages, and that a word-for-word translation from the foreign language is no safe index of skill in reading.

The tests must be reliable; that is, they must measure uniformly and consistently whatever they do measure, just as a foot rule does, or a quart measure. The reliability can be determined by statistical procedures in accordance with definite principles.

The tests must be so constructed as to be readily administrable under normal class conditions with a minimum risk of misunderstanding on the part of the pupils and the participating teachers. They must be objectively scorable by a key, so that the process of scoring becomes as nearly mechanical and invariable as possible.

The test should also be comprehensive and uniform for all grades from the first semester through the eighth, so that it may be possible to compare directly the attainment of all pupils as individuals and by classes. Each unit should therefore be long enough and so graded that first-semester pupils can make a score while the most advanced groups have a chance to show their mettle. It is then necessary to tabulate the scores by classes and semesters, to compare the semester medians with corresponding scores in the same school, or since such tests are usually standardized and provided with semester norms, to compare them with semester medians obtained from a wider administration.

It is desirable also to calculate the percentile rank of each pupil and of each class, for in this way it is possible to compare directly the scores made by pupils and classes in different semester- and year-groups, and thus to ascertain whether sixth-semester achievement is relatively on a par with what has been attained in the third and fourth semesters.[8]

[8] Henmon, *op. cit.*, pp. 148-72 and Figures 15-38.

We constantly hear complaints of the lack of standards in our school and college work in modern languages. College teachers regret that this is true of the secondary schools from which their Freshmen come; high-school teachers bewail a similar lack in the junior high-school classes and particularly in other high schools from which they may have drawn pupils by transfer. A teacher in a well-known high school wrote me in February, in reply to a request for help on a testing administration, that she and her colleagues could not accede to my request because their beginners' classes of the preceding year had been so badly taught that they had made no progress; and, since all their energy had to be directed to making good lost time, they had none to spare for testing administration. If two days had been devoted to testing at the end of each semester of the first year, the school authorities could have easily detected the state of affairs and could have taken remedial steps. In this instance my high-school colleagues had the wrong point of view. What their situation needed was more testing. Then, with definite data in hand, it would have been possible to determine whether the low spots in the curve of progress were due to poor teaching or to other causes.

It is pertinent to ask at this point whether it is possible to set standards of accomplishment in modern-language classes, and if so how may this be done. At present, virtually our only standards—if the term may be used in this connection—are the number of semester-hours involved and the amount of ground covered. In the *Report of the Committee of Twelve* of 1898 the writers undertook to enumerate roughly for French and for German the grammatical topics to be studied during each year and to indicate the degree of proficiency to be sought for. The report suggested also the approximate number of pages to be read and gave lists of texts suitable for reading in the three courses—elementary, intermediate, and advanced. Since then many other committees, local and national, have drawn up lists of "minimum essentials" for the three languages. School boards and state departments have published outlines and syllabi. All this activity is reflected in the content of present-day first- and second-year books, and as a result the modern-language course the country over is fairly well "standardized" in respect to grammar topics studied, to the amount of reading done, and to the texts usually read. This has not resulted, however, in the establishment of standards of progress toward the various objectives that we profess. Evidence to substantiate this statement is provided in abundance by the Wood and the Henmon studies already referred to.[9]

[9] See especially Henmon, *op. cit.*, pp. 194-95, Figures 39-42.

Without entering on a discussion of detail, one may venture the statement that standards of achievement in any academic subject must of necessity be relative rather than absolute. We must first ascertain what is accomplished by normal pupils under good conditions, and then compare the attainment of pupils in general with this as a basis. At the same time, we must experiment in order to ascertain whether improved conditions may not raise the level of the norm. In determining such relative standards, reliable measuring instruments are essential, measuring instruments that render it possible to compare achievement in knowledge and in skill. Without such instruments the attainment in each class in each school must remain what it is now, an unknown and infinitely varying quantity, the great academic mystery, the everlasting educational X.

An ideal measuring rod, when properly applied, will enable us to compare results in a given class with the average performance of large numbers of other unselected classes and individuals, and with the scores made by selected groups, and to accept the differences in the scores as indicating the relative attainment of the groups in question. This ideal measuring rod has not yet been constructed, but very real progress has been made. The instruments now available are vastly superior to the devices usually employed, and when the members of our profession become fully awake to the progress that has already been made and to the possibilities that lie ahead, the demand for further development will become so insistent that greater advances will inevitably follow.

Some one may object that what has been advocated will be interpreted as calling for the abandonment of all individual class testing on the work of the week or the month or the semester. Such, however, should not be the case. Indeed such a result would be regrettable. At the same time it is unquestionably true that teachers should pay far more attention than they do to the subject-matter and the technique of class examinations. They can profit greatly by the experimentation that has resulted in the development of standardized tests, and they can construct tests that may be roughly standardized for local purposes. The procedure to be followed can only be sketched here.

Vocabulary.—If the lists of words to be mastered in the course are divided into blocks of one hundred or more according to semesters or to other suitable groupings, and if several groups of fifty or one hundred each are chosen from these blocks in accordance with some sampling plan—every third or fourth word, for example—and administered in all classes by the multiple-choice technique or some

other tried procedure, in order to determine the relative order of difficulty of each item, then two or more relatively equivalent tests may be made, one of whicr is to be administered near the close of each semester.

Grammar.—A similar procedure may be followed with a grammar examination: the selection of several questions or exercises to illustrate each of the phenomena insisted upon at the various stages, the administration of these in blocks to all classes, a final arrangement in groups according to difficulty so as to include items appropriate for each level and so as to form a comprehensive and uniform test for all classes in the modern language.

Reading.—Reading passages may be selected and graded in similar fashion with due regard to vocabulary, to syntax, and to difficulties arising from the thought content. Not that all vocabulary items and grammatical constructions are to be excluded except those that pupils have already studied; that is one of the most prevalent fallacies among modern-language teachers. Unless pupils have enough reading power to carry them over occasional unfamiliar words and phrases to the comprehension of a thought that lies within their scope intellectually, they cannot be said to have reached reading ability in the foreign language. If the reading test is to be administered as a translation test, the situation immediately takes on another aspect and every item in the text must be familiar. After a considerable number of passages have been selected and graded for difficulty on the basis of the teacher's judgment, they should be subjected to trial in convenient time groups, using as a testing technique content questions as in the American Council reading tests, or multiple-choice questions on content, or the procedure followed by the Van Wagenen German reading scales, or the true-false procedure.[10] When in this way the true difficulty of the various passages has been ascertained and when all unsuitable passages have been eliminated, there should remain enough material to make up two or three tests that are roughly equivalent in difficulty and comprehensive in scope.

Composition.—For the grading of free compositions, the American Council composition scales will be found to be much more trustworthy than the unaided judgment of the teacher, even when the compositions are based on a variety of topics.

Cultural material.—A list of topics relating to the foreign land and its people may be drawn up for the whole course. Only those items that actually appear in the texts used, or in the outside reading, or that figure in the teacher's own contribution should be included.

[10] Henmon, *op. cit.*, pp. 22-30, 301-303.

Questions on these topics could then be developed into comprehensive and uniform tests of suitable length.

Aural comprehension.—The ability to understand spoken French or Spanish may be tested more fully by reading aloud brief passages and allowing a few minutes after each passage for a summary in English. Here too the multiple-response technique would seem to be promising.

It is evident that such a testing program would call for more time and effort in building up a battery of examinations than we now expend. It would entail also free use of the mimeograph, or of the printing press. Pupils must be allowed to see the test material only while they are writing the answers, and teachers must refrain from using this material as the direct basis for review with the class, for these examinations are to be considered purely as testing devices and only indirectly as aids in teaching. On the other hand, when such examinations have been developed, they may be quickly and easily scored, and if two or three roughly equivalent forms are available, they may be safely used for a number of years. Then, if records are kept from year to year and the results carefully tabulated, teachers and school officials will soon have at their disposal a set of semester norms which will be of immense aid in eliminating gross mal-classification and in controlling any experimental undertakings. If, furthermore, fully standardized tests, such as those of the American Council group, were administered once or twice each year, the real situation would be even more fully disclosed. In colleges and universities where there are considerable numbers of first- and second-year students of modern languages, representatives of the department of education are unusually glad to give technical aid in such an enterprise. In larger school systems there are usually bureaus of educational research that can and will make their resources available for such experimental tasks. The books by Wood and by Ruch and Stoddard will be of great service in supplying practical guidance and technical assistance.

It may be useful to summarize the various points made in the foregoing exposition of the defects in current methods of determining progress in modern languages and of the merits of a different procedure that is more in harmony with present-day developments in the educational field.

The prevailing system of measuring attainment in modern languages has several grave and well-nigh irremediable weaknesses, even when operating under such favorable conditions as those prevailing in the New York Regents' examinations and those of the College Entrance Board. It makes no allowance for variations in ability in

pupils and in teachers, since pupils at a given school level are not allowed to compete with others who are differently classified. It renders impossible the establishment of relative standards of attainment in a school or in larger administrative units. It is one of the major causes of the present lamentable mal-classification of students in high school and in college, whereby from 50 percent to 60 percent of those grouped in a given semester- or year-level are demonstrably out of place by a semester or more. It helps confirm our tendency to rate students on the basis of ground covered and time spent instead of on their attainment in knowledge and in linguistic skill. It renders well-nigh impossible any direct check on rate of progress by school authorities and places students entirely at the mercy of chance in getting good teachers. Finally, the pupils themselves and their parents have no way of gauging their progress in the subjects, nor have teachers any definite basis for judging how a particular group compares with other groups when admitting new students to their classes.

The uniform, comprehensive, objectively scorable test, whether sanctioned by full standardization or only by local tryouts, provides a way of checking attainment on the only safe basis, that is, on the basis of relative performance, and thus offers precise data, which, when supplemented by personal knowledge of pupil capacities, will certainly result in more homogeneous classification and will make it possible to undertake real experimentation with respect to the many questions about which, after all these decades of modern-language teaching, we still have to rely on conjecture, on surmise, and on personal impressions. Modern-language advocates have rightly been insisting on the need of better-trained and better-equipped teachers as the first step toward better teaching, and real progress has been made in that direction despite the great difficulties that confront us.

The investigations now available make it clear that we must also lend our efforts toward finding out better ways of measuring the results of our classroom activities. It is now clear that good testing waits on good teaching and academic health on both, and that time spent in gauging more accurately the results of our teaching efforts is every whit as well invested as any of the scanty hours that we have in which to do our immensely complex task.

Music

Appreciation--a Chameleon in Music

E. H. Wilcox[1]

Music teachers are eager to discuss the materials and methods of their profession. Few classes of teachers evidence such zeal for a small catalogue of adopted material. No other group will embrace a particular method with so much enthusiasm or hold to it with such tenacity. We seek to prove the value of our favorite methods and materials by devising tests to disclose what facts our pupils have learned, or forgotten, from grade to grade. We are proud if 48 percent of our seventh-grade pupils know that treble clef, two sharps, fourth line, and "do" are congruous circumstances.

Accomplishment tests have been devised by competent educators trained in music, psychology, and educational research. Classroom procedure has been subjected to the most careful and sustained scientific experimentation. But no scientist has determined just what value the average adult will experience from his ability to recognize that "do" in the key of D major is on the fourth line of the treble staff. We become nearsighted and blind by focusing our attention on daily routine. We need the visual stimulation and perspective of looking for ultimate objectives and educational goals.

What is the ideal status of artistic things in our civilization? What relation has music to this general artistic life? What place have I, a public-school music teacher, in aiding the children entrusted to my care to take a normal, healthy part in this phase of our civilization? The music teacher's prayer must be: "Give me a broad view of life. Help me to choose methods and materials which will develop attributes of permanent value to my pupils when they have attained the adult state. Help me to cease teaching facts for facts' sake, for art is greater than science, and a human life is greater than a work of art."

If the average adult has more occasion to react to music produced by others than to produce music himself, that fact should help define our objective in public-school music. For the sake of this discussion, let us assume that Mr. and Mrs. Average Citizen will spend more hours in company with the phonograph than with clef

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signs, more evenings with the radio than with key signatures, more time in the movie, ballroom, church, cafe, and concert hall than at the apartment upright playing works of Bach and Bartok after the husband has completed his day at the shop and his wife has finished her ironing. If this is true, our goal is clarified to that extent. We must help Mr. and Mrs. Average Citizen to be sensitive to good music so they will choose the best programs from the air, the disk, the theater, the park band, and the church, thus performing their parts toward elevating the community taste in music, since the listener is the only one who can raise the community ideals and "make America musical." If appreciation is the most important function in music for the average adult, then methods and materials must descend from their throne in public-school music and become necessary but subordinate servants.

The first duty of teachers is the investigation of appreciation in the adult, its nature, characteristics, and growth. When this is understood, the teacher can intelligently choose materials and methods to direct the child in his rapidly changing artistic reactions and guide him through the treacherous and deceptive upheaval of adolescence to a healthy artistic sensitiveness in adult life.

A study of the child's development shows that the individual goes through the various stages of racial development. Reference to racial history often throws light on the unfolding of capacities in the individual. I shall sketch the chronological development of various musical traits in the race in order to throw light on the order of appearance of musical talents in the child. This discussion of appreciation is the best type of definition for such a complex experience.

Millions of years ago when animal life first appeared on the earth and before reasoning or intelligence developed, the five senses played a predominant rôle in preserving life. The ear warned of the enemy's approach or caught the mate's call in the season of reproduction. Centuries of these experiences developed instinctive reactions to aural stimuli. Sounds connected with dangers produced immediate physiological reactions in the individual to help him meet or escape the impending evil. These instinctive reactions have persisted and, to this day, sounds which are loud, harsh, and abrupt change the depth and rate of our breathing, alter the rate and strength of the heartbeat, send the blood away from the surface of the body, increase the tonicity of the muscles, raise the blood pressure, and release stored sugars. It is a long cry from the aboriginal in the storm-swept forest to the modern child experiencing a touch of the same thing during the storm section of the "William Tell Over-

ture," but the physiological reactions are similar. Sounds connected with lovemaking and peaceful occupations, on the other hand, have a different effect. A softly sustained flute tone and a sudden blast on the trumpet produce different instinctive reactions, which can each be explained by our biological inheritance.

A first fact in our understanding of music appreciation might be, then, that sounds produce instinctive physiological reactions. Such reactions are immediate and independent of the intellect. They might be called purely animal reactions, but they play an important part in our response to music and are most apparent at musical climaxes of great power and strong accent.

Animals gradually learned to originate sounds and convey messages from one to the other. These primitive, inarticulate sounds expressed fear, rage, love, exhilaration, and contentment by means of tone quality and inflections in pitch. This heritage, strengthened by use through millions of years, is effective today and may be stated as our second and third facts, namely, that tone quality and melodic inflections produce reactions based on vocal utterances which originated before the appearance of civilized man and which have been cultivated and refined during the development of song and speech.

Primitive man continued to react to volume, articulation, quality, pitch, and melody. To these he added rhythm, through his ability to think of sounds in groups. Regularly recurring sound stimuli produce regularly recurring nervous discharges and muscular reactions. The primitive man felt rhythm in his muscles, and, by the persistent use of a monotonous rhythmic pattern, developed a nervous self-intoxication. Our fourth principle, then, may be stated as follows: Rhythm produces a muscular and nervous reaction which may be of power.

At this point the artist emerges from his low estate. Standards of tone quality are established. Instruments are chosen for their approximation to the tone desired. Certain voices are approved because of their quality, power, range, and flexibility. Trumpeters burst their cheeks vying with each other to win the laurel wreath for the loudest tone. The highest tone, the lowest tone, the longest tone, the softest tone, the most beautiful tone, the most rapid scale, the most brilliant staccato, the most perfectly rounded phrase with the most adequate breath control, the most powerful climax—what success could we have in our bands and orchestras today without these standards and the urge to reach them? A distinguished layman once described the pleasure induced by music as "of the same kind we feel on seeing the surprising feats of tumblers and rope dancers, who execute difficult things." A world-renowned musician touched the same point by

stating, "In the first place . . . in art a difficulty overcome is a thing of beauty." Hence, a fifth fact is that the establishment of ideals for performance and the approximation of these ideals is a source of musical satisfaction.

As the human mind developed there appeared the germs of form. The Psalms, the Songs of Solomon, the hymns from the Rig Veda, and early Chinese poems evidence a considerable appreciation of form. This appreciation was of a higher type than what had come before, because it involved the highest human qualities which had emerged to that time. It was the first type to require sustained intellectual effort. The sixth principle is: the organization of melodic, rhythmic, and dynamic material into a unified form brings satisfaction and pleasure.

When music once attracted man's intellect, his submission was complete. The Chaldeans, Babylonians, and Hebrews expended much thought on music. Some of the earliest Chinese books dealt with music as an art. The Greeks wrote on the subject, and in our own civilization that period of intellectual fruitfulness called the Renaissance disclosed the beginnings of a great wave of intellectual interest in music. This led to the great polyphonic era from 1450-1650. In this period of increasing mental grasp we observe great delight in the combinations of melodies. Involved imitations wrought mental exhilaration and wonder by their very brilliance and cleverness. So we may state that the combination of melodic lines, each of which carries its own stimuli, brings a distinct type of musical pleasure in which the intellect functions.

Counterpoint cannot be entirely divorced from harmony, which is the basis for another fact, namely, that tones sounded simultaneously produce an effect which is different from the sum of the effects of the individual tones. The listener reacts to this through his harmonic sense. In common with the other high types of response, the harmonic reactions increase with experience and completeness of concentration and mental grasp.

Descriptive music is often said to have begun with Kuhnau. In reality it began much earlier. To many people music is primarily a stimulus for auditory imagery. This type of reaction is more widespread than some of us had supposed. In many cases its value is debatable. Some teachers make every piece tell a story by describing a chain of events for visualization. This experience can be noted as a ninth fact, that in many minds music is descriptive of visual imagery or a chain of external events, and the pleasure in listening to music is largely determined by this by-product of music.

Standards for composition developed hand in hand with the response to form, harmony, counterpoint, technique, and purpose. Pieces are prized for the relation between the results obtained and the results desired, the gratefulness for the instrument involved, the unity without monotony, and the general effectiveness. Hence, we know that man has developed an appreciative evaluation of the skill of composition. It appears in a rudimentary form at an early age, but it is most prominent at a much later period.

Association occupied a place of increasing importance with the dawn of the nineteenth century. Democracy was in the air. The individual assumed a new importance. Attention was directed inward. Subjective experience held the public eye. Music was considered an expression of inner emotional states. Thus evolved the idea that music could express man's struggle against destiny and similar heroic problems. Beethoven is reputed to have described many heart-rending situations, from "The Knock of Fate" in Opus 67 to "Fury over a Lost Penny" in Opus 129. So we know that compositions may be symbolic on the grand scale. Oftentimes this symbolism expresses inner yearnings or conflicts which find utterance more readily in music than in speech.

With the objective attitude came added attention to moods. The inevitable result was a type of music which did not try to tell a story or astonish with its brilliance, but used all forces to establish a certain subjective feeling-state. Previously there had been gay music and sad music, but these merely described or expressed gay and sad things or feelings. The new music did not wish to picture the gaiety or sadness of others. It attempted to create that feeling-tone in the listener. In this period the moods of sweet sadness or the tender charm of half-waking dream states were given prominence. Thus, music can depict and create moods of various types.

A small percentage of adult concert-goers attend concerts because the music stimulates the imagination and increases the speed and penetration of their intellectual processes. More than one problem entirely unrelated to music has been solved in the concert hall, for music eliminates inhibitions, giving freedom, agility, and reach to the thought processes.

In our own day and in our own land, musical scholarship is in the ascendancy. We study composers from the standpoint of their period, nationality, schooling, environment, and ideals. Compositions are evaluated in relation to their place in the history of music form, style of writing, scoring, and content. Music as a science need not hamper music as an art. In fact, scholarship applied to music can

enhance our enjoyment of the art and strengthen our claim on the right to guide the taste of the new generation.

A combination of the scholarly and artistic attitudes toward music will lead to one of the chief goals in music appreciation, namely, friendship with great composers. Literature gives us the privilege of knowing Hamlet and Falstaff but it gives us the greater privilege of knowing Shakespeare. Dickens is greater than Scrooge or Tiny Tim; Mark Twain is greater than Huckleberry Finn; Beethoven is greater than his nine symphonies or sixteen quartettes. We really understand these works only when we see Beethoven in them. Every sincere and sensitive music student should become familiar with all the greatest works of the greatest masters so that in time he may discover the minds and hearts of the geniuses of music. The scholar who can spend some time each day with the whole-souled Bach, the fervent Beethoven, the good-natured Schubert, the refined Mozart, the brilliant Liszt, or the reverend Franck has found companionship that a king could not command.

The final type of appreciation is difficult to describe. Our vocabulary is too limited. This particular type involves no conscious mental effort. Occasionally it comes unbidden, but it rarely will appear when called. Philosophers call it the "aesthetic experience." Volume after volume has been written to describe it. Hugh Walpole tells of a childhood experience with a picture which suddenly impressed him with "a sense of excitement and magic." Münsterberg sees the true aesthetic experience as "complete repose in the object" of beauty. Others refer to loss of consciousness of surroundings, with complete absence of reason and associational activities outside the inner organization of the work of art, and a feeling-state without pleasure or pain but consisting entirely of a quiet exaltation. Those are choice moments when the artist loses the sense of time and surroundings to be at one with beauty. They are experiences of great spiritual elation and satisfaction. Man's highest powers are involved, and through them he glimpses the domain of the Gods far beyond the material things of life. The final and most important fact of appreciation is the aesthetic experience.

The well-developed adult will appreciate all of these factors, direct physical reactions, tone quality, melody, rhythm, skill of performance, form, counterpoint, harmony, program music, standards of composition, romanticism, impressionism, mental stimulation, increased suggestibility, musical scholarship, intimate understanding of composers, and aesthetic repose. These factors may have developed in the race in the order given. They may appear in the individual in

about the same order, but each element has a long period of development, and even though one may start before the other, several capacities are soon developing side by side.

The teacher's task would be greatly simplified if each of these seventeen elements appeared in the individuals on succeeding birthdays and grew to maximum strength during the twelve months. We could then teach one very definite, accurate thing to all children of one age. But, alas, no two children are identical. One child of nine may have as much musical sensitiveness as another of twelve. Mary at seven may demonstrate responses to a dozen musical elements while Jane of the same years may respond to only three or four of the more primitive factors. At the age of fourteen Tom may react largely to the intellectual phases of appreciation, while Dick responds only to the romantic elements, and Harry treats music as glorified manual training. No one of these seventeen factors is constant in the strength of its appeal. If a piece of music were being played now, your neighbor would be most strongly moved by one factor while you would be most impressed by another. Mathematicians say that seventeen elements can be arranged in 355,687,428,096,000 combinations. Were an artist to illustrate my point by performing for you now, no two people in this audience would have identically the same reactions.

Appreciation is a variable factor in the equation,

$$\text{Performer} + \text{listener} = \text{reaction.}$$

In this equation we may grant a stable performer, but no two listeners are alike. Therefore, the reactions of no two individuals are alike. Appreciation, the chameleon in music, takes on the color of the listener. In its manifold appearances it exhibits as many shades as there are individuals to whom it can attach. The color of appreciation in the abstract cannot be defined because it has a new color for every listener.

How we can envy the algebra teacher! The quantity

$$(a + b)^2 = a^2 + 2ab + b^2$$

no matter how many students in the algebra class tackle the problem. But let the same class tackle Debussy's "Afternoon of a Faun," and each student will attain a result which is true for him and not true for any other member of the class. No wonder our appreciation texts vary. Sometimes they are an expression of the type of appreciation most often experienced by the author. In these we can doubt their adaptability for the children to whom they are addressed. Other appreciation texts are based on material which has produced the most obvious and immediate responses from students taught by the author.

These overlook the very important facts that obvious reactions are not always the most significant, and immediate responses are not necessarily of greatest permanent value.

The teaching of appreciation is the most difficult task faced by the music teacher, but it offers the most attractive possibilities. This immense field toward which all music education—except possibly in vocational schools—should be directed has never been surveyed and had its soil tested to determine what seeds and seasons will produce the best crops. And this is not an abstract problem for some academic professor to mince with. It is a practical, everyday piece of research in which each one of you can participate daily. For example, is rhythm the predominant factor for the kindergarten and first two grades? My series of facts mentions tone quality and melody ahead of rhythm. Does the child of five to eight years respond less readily to melody and tone quality than to rhythm, or rather meter camouflaged in the texts under the name of rhythm? Does this prove it is of greatest ultimate value to the child to study rhythm, or meter, during these years? As far as I know only one accurate set of observations has ever been attempted on this point.

Is it true that our junior high-school and senior high-school students must be given musical inanities before they are able to understand simple movements of Mozart or Brahms? Is it necessary to go through the Haydn and Tschaikowsky periods before presenting Debussy or Moussorgsky? Will high-school students absorb de Falla, Milhaud, Hindemith, and Bax instead of the ever-present Minuet in G, Humoresque, Goin' Home, or Melody in F? Why is there such a disparity between the music usually presented in high school and the music of the concert and recital hall for which our classes are to produce audiences?

As teachers we must cease to be cogs in a machine, constantly following other cogs around the wheel. We must each become self-reliant investigators in this verdant field. Let us set our eyes on the educational objective of preparing our children for adult life rather than for school programs. Let us ever be alert to the differences in individuals and the consequent differences in their reactions to music. Let us be true teachers in discovering how to bring to fullest flower the innate capacities of our pupils. And above all let us maintain the spirit of the true teacher, based on love of children and respect for our subject, enlivened by the investigative and experimental attitude of mind, enriched by a philosophical view of the great problems of life, and leading to a result in which we individually make a tangible impression on the life of succeeding generations.

Some Universal Principles of Communication

John Mills[1]

All communication involves conventions and understandings as to the meanings of symbols, and it is usually through making symbols audible or visual that intelligence is transferred. When distance is too great for unaided ear or eye, electrical systems apply. All those in use today derive fundamentally from the telegraphy of Morse and the telephony of Bell. Telegraphy and telephony, by open-wire lines, by cable, submarine and aerial, or by radio, however unrelated in origin, early development, and commercial exploitation, are now more than sister arts—physically they constitute a unitary system based on common principles.

For Morse and Bell working in the early days of modern science, batteries were the convenient sources of electrical currents, although electro-magnetic induction as discovered by Faraday was being applied to the development of generators. The motor action of a current was also known and was being rapidly applied. A simple motor action of which both inventors made effective use was the attraction by a current-carrying coil for an iron armature.

There were thus at their hands, although in rudimentary form, some of the essential elements of a communication system. It remained for the inventors to develop the still more essential concept of such a system and to supply the remaining elements. Time has refined those elements, more basically conceived, developed or adapted new principles and mechanisms, but, broadly speaking, their elements are typically those necessary to any system of communication. First, there must be a source of energy which can give rise to an electrical current; second, a mechanism for varying this current in conformity with the speech or signal to be transmitted; third, a medium for this transmission; and last, a mechanism which will translate the current variation into speech or signal. For Bell the second element was the telephone transmitter, for Morse the telegraph key. For both the fourth element was an electro-magnetic motor, in one case the lever which clacks in a telegraph sounder and in the other the diaphragm which vibrates like a drum head.

[1] Bell Telephone Laboratories, New York.

In the telegraph system the lever of the sounder reproduced the up and down movement imposed by an operator upon the lever of the key at the sending end of the line. The time between up and down movements was the basis of the code of signals. Relatively long intervals represented dashes, and shorter ones dots. The receiving operator was able to perceive the interval aurally because the lever made characteristically different sounds when it struck against the upper and the lower stops. Visually, sometimes, the series of dots and dashes was recorded by arranging the down movement to bring a pen against a moving strip of paper.

In the telephone system, back and forth movements of a diaphragm, as occasioned by the sound waves in the surrounding air, were reproduced in movements of the diaphragm of the receiver, and these in turn established sound waves intelligibly similar to the original. The code for the interpretation of these sounds was already adopted in the language conventions of the speaker.

By word or sign, therefore, but fundamentally by movement is electrical communication accomplished. The signs may lead, and soon did, to complete words, recognizable according to the conventions for printed letters. By proper arrangements of the motions at the receiving station, letters are printed on a moving strip of paper by an electrically operated typewriter. For this purpose the telegraph key at the sending station is replaced by equipment which includes a typewriter keyboard. The entire assemblage then becomes the so-called "printing telegraph." By other arrangements for the reproduction of movements, as in the telautograph, handwriting has been transmitted. And finally, by more elaborate and refined sequences of movements, images may be transmitted. Picture transmission is a commercially available service, and television pauses at the threshold, a practical accomplishment of undetermined economic possibility.

These later systems involve the conscious and deliberate control of electrons. Such conscious control of electrons in communication systems dates from the development of the three-electrode high-vacuum thermionic tube. The tube was applied to long-distance telephony in the 1914 opening of Bell System service between New York and San Francisco and in the 1915 experimental transmission from Washington to Paris—the beginning of a development which has already linked to the American telephone system those of most of Europe and promises to add those from South America.

In wire transmission the vacuum tube became a circuit element; along the transcontinental lines, for example, it was interposed at Pittsburgh, Chicago, Omaha, and so on, to amplify successively as the

complex but feeble currents of telephony became too much attenuated. In radio transmission the tube was utilized in the terminal equipment. At the sending station it gave rise as a generator to the high-frequency radio current, varied and modulated thus in conformity with the current from a telephone line or transmitter, and then amplified the resultant current with its hidden speech significance millions of times to impress it upon the transmitting antenna. At the receiving station other vacuum tubes reversed the process of modulation, that is, detected in the antenna current the modulating cause, and obtained a current similar to that in the original transmitter, which the tubes then amplified and sent on its way to the distant telephone receiver.

Long before commercial radio-telephone service with the European continent was initiated—since its development, requiring among other things studies of an unmapped transmission medium, was interrupted by the war—the principles of operation just described had been applied in so-called carrier systems of telephony and telegraphy to the more efficient use of the long distance open-wire network of the Bell System in the United States. Where a single pair of copper wires had previously transmitted at any instant only a single conversation, properly designed terminal equipment, employing vacuum tubes, permitted as many as four simultaneous conversations. Each conversation had its speech significance carried by a distinctive current—a current of frequency different from those assigned to the other conversations. Multiplex telegraph followed the same principle, using distinctive currents for each telegraphic channel.

The vacuum tube also has its part in the system for the transmission of photographs, which was well established on the telephone lines of this country by 1925, and has a part in the recently demonstrated systems for television. In both of these more recent developments, however, another electronic element, the photo-electric cell or electrical eye, plays the leading rôle in the terminal apparatus. This cell is a light-sensitive device which gives rise to an electric current always accurately proportional to the amount of light which falls upon it. In television, still another device which utilizes known actions of electrons plays the counterpart to the photo-electric cell. This is the noon tube, an electric lamp keenly sensitive to variations in its electrical supply.

All these systems of communication, wire and radio, whether for telegraphic signals, the spoken word, or a scene—all these systems operate on certain common physical principles. With them there might be included the systems for sound pictures, of which two

developed in Bell Telephone Laboratories are in wide use today. These, also, are telephonic systems, but in them transmission is divided into two steps by an intervening act of recording. In one system, the record is cut by an electro-magnetic graver on a wax disc; in the other, it is photographically recorded on a strip of film as a series of striations of varying photographic density. In the disc system, reproduction comes through a special form of telephone transmitter, actuated by a needle which follows the groove in the phonograph disc. In the case of the film, an electrical eye observes from instant to instant the varying photographic density of the sound record and gives rise to a corresponding current.

Any system of communication today involves apparatus for two distinct purposes: first, the production of a channel for communication with its related terminal equipment, and second, the control, switching, and supervision of the channel. In complexity and first cost the apparatus required for the second purpose may exceed that for communication proper. This is particularly true in the short-distance communications of large metropolitan areas where improvements in reliability, speed, and facility of service are obtained by bewildering assemblies of apparatus in the huge central offices. In the penel-type dial system, for example, there are complicated assemblies of small electro-magnetic devices, intricately interconnected, each of which serves in lieu of an operator and constitutes an electrical brain for the system. Each assembly receives from a subscriber's dialing operations the same statement of desired numbers as would an operator, storing the information within itself. It then proceeds, as would the operator, to consult a routine guide and to handle the call until the distant party answers, or until it reports back that he fails to do so.

Within these decoder senders, as they are called, hundreds of operations are performed successively for every call of a subscriber to which they attend. They must do their appointed tasks accurately and, because they are complicated and expensive, should they fail, they must be promptly inspected and readjusted. In their more recently designed forms, therefore, new cerebral functions are being provided. Should one of these senders in its sequence of operations fail at any point it will, of its own action, disconnect itself from the line of the subscriber whom it is answering and report to a maintenance man. Even more, for his information it will print on an electrical typewriter the number of the operation at which it failed. Could more human intelligence and efficiency be demanded of any organism than that it should quit work when diminished powers endanger its acts, call for help, and accurately diagnose its complaint?

Three groups of the apparatus concerned primarily with transmission in a communication system may be distinguished; namely, the transmitter, the medium or channel for transmission, and the receiver. The terminal equipment is fundamentally apparatus for energy conversion and the receiver and the transmitter usually perform complementary operations. In telephony the transmitter is a sound-sensitive device actuated by the mechanical energy of sound waves and giving forth electrical energy. The receiver is a sound-active device, converting electrical energy into mechanical energy. In ordinary telegraphy the transmitter involves a key whose up and down motions at the hand of the operator are reproduced by the bar of the telegraph sounder at the receiving station. In picture transmission a light-sensitive cell receives varying illumination depending upon the photographic density of the negative which it is scanning, and at the receiving station a source of light and an electro-magnetically controlled shutter serves as a complementary light-active device. In television a tube of neon gas, which responds to the current impulses from the light-sensitive cell of the distant transmitting apparatus, is the complementary light-active device.

In principle, it makes no essential difference whether the transmitter acts to convert mechanical into electrical energy or acts to control a source of electrical energy. Of the first type was the original telephone transmitter of Bell, which converted the vocal energy of the speaker. Incidentally, the same device also functioned as a receiver, performing the complementary conversion. The transmitter, however, with which Bell sent the first complete sentence, like most of those employed today, was a device for controlling the current from a battery. Its output of energy depended then not upon the vocal power of the speaker alone but primarily upon its efficiency as a controlling mechanism. In telegraphy, in the same way, the energy output of the sending key does not depend upon the operator but upon the battery which the key controls, and at a receiving station the energy of the received current is not directly converted into sound but serves to control another battery which supplies energy to the sounder.

In general words, therefore, a transmitter operates to control, that is, to modulate the current from an energy source in conformity with the signal to be transmitted. It makes no difference whether the current which is modulated is otherwise unvarying or not. An alternating current would serve, provided that it did not have a periodicity, that is frequency, which would be confused with that of the signal itself. Both Morse and Bell, in the early days of the electrical arts,

employed batteries, which were the only energy sources then available, and so used unvarying currents, that is currents of "zero frequency," as we would say today to preserve the generality.

Those who followed Hertz into radio used the highly damped and alternating discharges of condensers through inductive circuits, and this employed groups of high-frequency waves. For telegraphic purposes these waves proved entirely practical since the high frequency was efficiently transmitted from their antennas, and the group frequency, being greater than the frequencies involved in the dot-and-dash signals of their code, gave rise to no confusion. When, however, the experimenters attempted radio-telephony, among their many difficulties was the fact that their currents involved frequencies which confused the listener because they belonged in the frequency range that should have belonged solely to the voice-modulated currents.

The difficulty was overcome by the adoption of a generator of so-called continuous waves. In the 1915 transatlantic experiments a vacuum tube acted to convert energy from direct-current sources into a high-frequency. The current had a definite and single frequency determined by the capacity and inductance which were associated with the tube. This current was then modulated by the speech current from a transmitter, amplified, and impressed upon the antenna. The modulated current was highly complex, including as components the carrier current itself and the products of modulation; but the important thing about it was that its component of carrier current was of a single frequency. The carrier currents which had been utilized in the early attempts at radio telephony had not been of single frequency but had been complex currents involving components of a wide range of frequency. Corresponding to each of these components there had been products of modulation, giving rise to much confusion.

The nature of the confusion appears from a consideration of the act of modulation of a single-frequency current by a transmitter current, itself involving only a single frequency. A tuning fork produces essentially a single-frequency note. Imagine its sound to actuate a transmitter and the resulting current to modulate a carrier current. For convenience of arithmetic, assume the carrier frequency to be 100,000 cycles per second and the fork frequency, 1,000. The current from the modulating device, which is again the versatile vacuum tube, will have three high-frequency components, one of frequency the carrier and the others so-called sidebands. These are respectively above and below the carrier frequency by the amount of

the modulating frequency and thus they are 100,000+1,000, or 101,000, and 100,000—1,000, or 99,000.

If, however, a complex sound involving notes of several different frequencies actuates the transmitter, each note will produce its sidebands. The intensities of the currents in each pair of sidebands will depend upon, and be directly proportional to, the intensity of the component note which produces them. Music or speech may thus be hidden in sidebands of modulated current and transmitted as high-frequency currents.

At the receiving station another vacuum tube acts to produce currents whose frequencies are sums and differences of those impressed upon it. If the currents of the previous arithmetical example are received, the difference terms will be currents of frequency 1,000, that is, of the original modulating frequency. These are easily distinguished from the high-frequency currents and, when passed to a telephone receiver, they produce the same sound as if they had been directly transmitted to it and none of the intervening operations had been performed.

The modulated currents and their accompanying carrier current form a group relatively easily separated from any other similar group if the frequency bands of the group do not overlap and are not too adjacent. The allowable closeness depends upon the sharpness of discrimination of the selective circuits which are used for that purpose; and that again depends to some extent not only upon the engineering skill of their designers but upon the economically allowable complexity and cost of the circuits. In present-day radio broadcasting the carrier currents which are utilized by the stations in any particular area are legally separated by 10,000 cycles. The allowable separation of carriers, however, in order that one radio station's output shall not interfere with that of another through being simultaneously received and at too nearly the same loudness depends upon the range of frequencies which the sidebands must involve in order that they shall contain the essential notes in the speech or music of the program.

The range of notes which is essential for reproduced speech depends upon the occasion. For intelligibility a comparatively small range is required; naturalness demands more; and for essentially complete illusion, such as sound pictures require, still wider range is needed. For a telephone conversation wherein voice is to be recognized and its nuances of inflection appreciated, the range from 100 to 3,000 cycles will serve; but the range from 60 to 7,000 is none too large for an aesthetic illusion from a "talkie." Music, particularly of stringed instruments, requires a wider range than speech, but very

good effects can be obtained with only a slightly larger range when it is unaccompanied by pictures.

For signals, other than those of music and speech, the necessary range of frequencies which must be allowed to the sidebands depends upon the character of the signal and the speed of signalling. In telegraphy, for example, if a dot occupies half a second and is separated from the succeeding signal by an equal interval of time, obviously a frequency of one cycle per second must be allowed. But this frequency is insufficient for good definition of the received signal because the abrupt change of current from zero to its full value and back to zero, as occasioned by the telegraph key, is not equivalent to an alternating current of a single frequency. Instead, it is equivalent to a complex alternating current involving a whole series of frequencies, three, five, seven, and so on, times the frequency which at first glance one would assign to the dot. Essentially complete simulation is obtained if frequencies as high as eleven times are transmitted and received.

Whatever the maximum number of dot signals which the telegrapher wishes to be able to transmit per second, allowance must be made, therefore, for a sideband with a frequency range eleven or so times as large. As a rule, a band of one hundred cycles does very well for the ordinary speed of telegraph signals. Speech and music, as figures mentioned earlier showed, require more, but television imposes the most severe requirement.

In any television system which can be imagined, some mechanism must send electrically information about the relative light and shade of successive elementary areas in the scene which is to be "televised," as the newspapers would say. This information must be applied at the receiving station to the reconstruction of similarly arranged elementary areas of light, differing in intensity according to the information transmitted. Furthermore, the complete scene must be reconstructed in a time within the limit of the persistence of vision of the human eye, that is, under one-sixteenth, perhaps only one-twentieth, of a second.

Imagine, as may well occur, that one elementary area of the scene is bright, when current must flow, and the adjacent area, practically dark, when there would be no current to be transmitted. The condition corresponds exactly with the sending of a dot in telegraphy. If the scene is analyzed into 10,000 elementary areas—and this would correspond to the detail in one square inch of 100-mesh half-tones—there would need to be the possibility of transmission of 5,000 dots for each time the scene is reproduced, or approximately

20 times as many dots per second. That means a width requirement for the sideband of 20 times 5,000 or 100,000 cycles per second. Such a requirement is equivalent to that of approximately 1,000 telegraph channels, or 30 commercial telephone channels, or 10 adjacent channels for radio broadcasting. Therein lies a specific economic condition for the future of television.

In fact, there is a general limitation for all forms of communication. Given a communication channel effective for transmitting a definite range of frequencies and given a type of signal to be transmitted, simple arithmetic permits a determination of the speed at which the signal can be transmitted; or, what amounts to the same thing, if the frequency requirement of the signal is less than that which the channel will permit, then the number of signals which can be simultaneously transmitted may be determined. An interesting illustration of this principle was given by R. V. L. Hartley who first stated it.

In substance he said: Let us imagine a line capable of transmitting all frequencies from 0 to 3,000 cycles. This would be sufficient for a good telephone conversation. We now imagine the current from the speaker's transmitter to be recorded as on a phonograph record. We then turn this record for reproduction at twice its recording speed, reproducing from it electro-magnetically and transmitting over the line to the distant station. For the transmission of the speech we use the line but half the normal time. At the other end we again record it, but now at double normal speed of the turntable. We then reproduce for the listener at half that speed, that is, at just the speed of the original record of the distant speaker. At first thought, it would appear that we could do the same for another part of the speaker and listener and utilize the remaining free time of the line for that speech and thus obtain a double efficiency.

The fallacy resides in the fact that neither speech would be adequately transmitted. Reproducing with the turntable run at twice normal speed would mean that any frequency originally recorded would be doubled; thus, a sound of 1,500 cycles would become one of 3,000. Since the line, by assumption, will not transmit frequencies above 3,000, no sounds with original frequencies above 1,500 cycles will be transmitted. In effect, therefore, half the frequency range of the message would fail to get through, due to our hurry. Similarly, of the other message, what might be called a half would get through, and we would obtain halves of two different messages instead of both halves of one. There would be no gain and, in fact, a loss since neither message would have its desired intelligibility.

Halving the time utilized in transmission always requires doubling the range of frequencies which the channel must transmit. We cannot gain by beating the devil around the stump, and in practice the communication engineer does not try. In practice it works out that the effort is confined to using to its fullest the transmission range of each medium, to placing the sidebands of various signals as close together as possible, and to avoiding the transmission of any unnecessary bands of frequency.

Two illustrations show the practice. Wire lines in the Bell System are multiplexed for transmission between stations over distances long enough so that savings due to more efficient use of the channel are greater than expenses due to added terminal apparatus and operation. Telegraph messages, for example, because they require a frequency range from 0 to about 100 cycles per second, are sent over the same pair of wires as telephone messages, which require from about 100 to about 3,000 cycles. In other cases some ten telegraph messages, with their bands adequately separated, are sent over the normal pair of telephone conductors. Sometimes, by suitable terminal equipment, there are transmitted over the same pair of wires not only the telegraph message and normal telephone message which together occupy about 3,000 cycles but a second telephone message, occupying a similar range but carried by a high-frequency current and utilizing the transmission capacity of the line for frequencies as high as 10,000 cycles. In still another instance, the lines are specially conditioned, and a frequency range is made available from 0 to about 28,000 cycles. Over such lines, by suitable terminal equipment, there may be sent in addition to the ordinary telegraph message and telephone message a total of three more telephone messages. In such cases, however, each of these additional messages is divided into outgoing and incoming portions, and a frequency range of 3,000 or so cycles is assigned to each portion. The various messages, therefore, use about twenty-one of the available twenty-eight thousand cycle range, the remainder being lost in providing adequate separation between the bands of the various messages.

The other illustration is found in the long-wave transmission system which provides radio-telephony with Europe. New methods have resulted there not only in increased efficiency in the use of the available frequency range but at the same time in economies of operating power. Instead of transmitting the carrier frequency and both sidebands which result from its modulation by speech currents, only one sideband is transmitted. For purposes of reception, a current of the carrier frequency is locally introduced at each receiving station,

and, hence, demodulation proceeds practically in the normal manner. In addition, by properly disposing the transmitting and receiving antennas in America and in Great Britain, and by special equipment, it is possible to use the same frequency of carrier for both outgoing and incoming parts of the telephone conversation. There is thus withdrawn for transatlantic telephony from the general ether channel the narrowest band possible for telephony, namely, that corresponding to the frequencies essential to the intelligible and natural reproduction of the human voice.

Artificial Light--Its Influence on Civilization

M. Luckiesh[1]

For countless centuries mankind has been constructing an artificial world which aims to be an improvement upon nature. It is to some extent a declaration of independence. This is the materialistic view of what we term civilization. Much of this artificial world is made possible by means of artificial light. In fact, the light and heat from burning materials made it possible for the first primitive beings to make a permanent abode indoors. Safety, leisure, comfort, the family circle, and opportunity to think and to develop certain abilities are thus associated with these crude artificial light sources.

Civilization advanced in many directions while the sources of artificial light remained feeble, flickering flames. The art of Greece, the splendor of the Roman Empire, and the Renaissance were illuminated by these crude flames. Our Revolutionary War passed into history before the lamp chimney was invented. A hundred years ago researches into electro-magnetism paved the way for the electrical age. Fifty years ago the first electric filament lamp was born, and this year will be celebrated as Light's Golden Jubilee in honor of Edison who took the first practical step toward this present era of inexpensive and controllable artificial light. Dominated by the habits developed through countless centuries of feeble flames, mankind is unprepared to use modern artificial light. Its great controllability, its limitless possibilities, its relative inexpensiveness are only beginning to be sensed by a relatively few persons.

Along with this new tool, however, come many problems and questions. Now that we have artificial light controllable in quality, quantity, and distribution, we may improve over natural lighting.

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Seeing is a partnership of vision and of lighting. We can only correct the refractive errors of eyes, but we have unlimited control over lighting. Therefore, vast researches are necessary in order to establish the foundations of a new science of seeing. We also know that natural lighting outdoors is measured in thousands of foot candles. When mankind came indoors, he greatly reduced the amount of natural light available. Furthermore, from the feeble sources of the past it was practically possible to provide only a foot candle or two of light. Linking this condition with the enormously increased necessity of visual work, we find a clue to the defectiveness of vision.

The efficiency and effectiveness of workers depend largely upon good vision. The proper lighting of schools and homes safeguards the growing eyes of children. Adequate and proper lighting of streets and building contributes toward greater safety. If everyone suddenly developed a seeing consciousness so that the potentiality of modern controllable artificial light were reasonably utilized, billions of dollars would be saved each year, but of more value would be the contribution toward the safety, comfort, and happiness of mankind.

There is the charm side of modern controllable light—effects obtainable far beyond those obtainable with natural light. In fact, there are endless possibilities which, upon being viewed with a knowledge that artificial light is now completely superior to natural light and even competes with it on a cost basis, indicate that man finally has become independent of nature in the matter of light indoors. However, the blessing of controllable artificial light will be lost if the light user does not develop a lighting and seeing consciousness.

The Physical Sciences in a Liberal Education

Arthur E. Morgan[1]

With the great expansion of knowledge and the growing complexity of life there is sharp competition for every hour of the college student's time. If that time were doubled or tripled, the pressure would be only temporarily relieved. We have thought too much about the positive value of various fields of knowledge, that is, we have considered the value of given subjects in and of themselves, without determining their relative importance by comparing them with other subjects that are competing for the student's time.

A persistent and orderly study of the relative importance of various fields of learning or of interest, difficult as it may be, is one of

[1] Antioch College.

the chief needs of higher education. It is not enough that a subject is highly valuable. We must determine its place in the curriculum by its value in comparison with other subjects competing for the same part of the student's time. The student is not capable of making this analysis. For the most part his interests are not inborn, as we have imagined, but are inbred, as a result of environmental influences. The difficulties of redistributing the interest of the student in accordance with the relative importance to him of the various fields is a difficult but absolutely essential part of a sound educational policy.

One of the greatest contributions which can be made to the intellectual life of a college student is the development of the scientific temper in thinking. Science can be taught without the scientific method, but in that case its greatest value is lost. The scientific temper is not something to be taught and learned as the theory of evolution or the multiplication table is taught. It is a phase of character, a temper of mind that must be developed by long repeated exercise, as good manners or skill in writing is developed. No short course in science will suffice. The development of the scientific temper and of the scientific method represent probably the greatest advance in human thinking for about two thousand years. That temper is only beginning to take root, and its dissemination is one of the major problems of humanity.

Next in importance is the teaching of the facts and principles of science. These furnish the basis of thinking, especially in our rapidly changing civilization in which traditional knowledge so quickly becomes obsolete. Without a knowledge of physical and chemical principles a man goes through life blind to a very large part of his environment.

Another value of physical science in a liberal education is the possibility of discovering a dominant life interest in those fields. Of students who come to Antioch for pure science, the greater part are diverted to other fields where success is more probable. On the other hand, a very considerable proportion of our students who go into pure science have discovered their major interest while being introduced to science for its cultural value.

Treating physics and chemistry as cultural subjects at Antioch, we have so entirely reconstructed the courses in these two fields, that they are more general than courses given to our technical students. This policy of giving two types of courses in physics and chemistry, inaugurated at Antioch in 1921, is gaining general acceptance. At Antioch every student, regardless of his major field of interest, must have a year of chemistry and of physics unless an examination shows

him to have had a substantial introduction to one or both of these subjects in secondary school. We believe the habits of mind and the knowledge of facts and principles which these courses develop are essential parts of the equipment for intelligent living.

Chemistry--Its Influence on Civilization

GERALD L. WENDT[1]

WHEN one refers to the influence of chemistry on civilization, one thinks, of course, of the industrial age and one recalls that this age of power and machinery, of large populations and large cities, would not be possible without a thorough and complete utilization of as much as we now know of chemistry. Obviously, industry depends on our knowledge of the materials and processes of nature.

I do not wish to limit my outlook to the industrial age, however. I resent the inference that civilization means industry and that we are civilized only in so far as we use machinery. There is much more than that implied in the word, civilization. To me it means not only the capacity for having large cities, in a word, urbanization; it means not only that we have more people living in comfort, but it should imply also a richer and fuller life for all. In that sense, I hope the world is gradually becoming civilized. There are many of my classical friends who say that we have made no progress since the time of the Greeks and that the only real progress that one can measure is the progress of chemistry and of other sciences.

Before I go into the subject of chemistry itself, I must give you my conception of the four planes on which we live, the four major aspects of our so-called civilization which I use as criteria of the richness of life. As the bottom plane, or as first on the list, comes utility. I could easily talk for an hour or for a month on the utility of science, and especially the utility of chemistry. I shall not do so. I shall stop merely to point out that practically every student who comes to college, even though he comes to a liberal-arts college, is interested in learning something useful. As President Rightmire has pointed out in his introduction to the printed program for this conference, we have had in our education a tremendous emphasis on the useful subjects—those which will serve to earn a living for the student—and most of us are glad to see a recent return to a more liberal point of view, to a desire for other and more precious things as well. Yet, the vast majority of our Freshmen come to college to learn something

[1] Pennsylvania State College.

that will give them the means of earning a living. Utility has its place in every profession, in every walk of life. Even the painter must do something useful, whether it be painting fences or painting portraits. He has that plane on which he lives, in which he exercises his profession, namely, the plane on which he earns his living. That is fundamental. If we are to live richly, we must be able to go far beyond that. I do not know how much further the uncivilized, prehistoric man went; but even he certainly went somewhat further.

There is a second plane of activity, a second plane of content in any profession or any subject on which I like to dwell, which we may call appreciation, an understanding of a subject and of its place in life and civilization—the social evaluation of the subject. We who are working in science are continually urged to know something about other subjects. Our own subject is always so interesting that it is difficult to persuade ourselves to attend a theater or to read books on other subjects. We meet the constant criticism that we are narrow. One reason for this which is not important, is that we do not understand the value of other subjects; the other, the important reason, is that we do not appreciate our own. There are, I admit, too many chemists and physicists who do not realize the value of their subject to the world, and when I say "value," I mean value beyond utility. But it is even more tragic that other people, including our writers and thinkers, have so little appreciation of these sciences. Every subject that a student can take up must have some social value, and the student should become familiar with it.

There is a third plane of living, too, which lies above those I have mentioned, namely, devotion. I regret to say that most college students never reach it except while they are in college and have intimate contact with their professors. No matter what subject students take, they should be so well fitted for it and they should become so well acquainted with it that they can at least understand the devotion that is given to that subject by those who live in it. I think that the most important thing we can do in the colleges is to fit the student to his specialty, or rather so to adjust the student and the subject that he is capable of really deep devotion to it. That is rare because so many students do not learn enough about a subject in their college careers really to find its deep values. But certainly in each class there are two or three students to whom there comes ultimately the feeling that nothing is so much worth while as their particular subject.

That feeling of devotion is quite comprehensible to me in a chemist, but it may not be so easy for me to see in an engineer. It certainly is not easy for me to see how anyone can devote his life to

agriculture, but there are many people who are devoted to it—and rightly so. I cannot see it because I do not know enough about that subject. We rarely can see deeply enough into any man's specialty.

The American business man has been ridiculed, severely ridiculed, within the past few years because of nothing worse than his supreme devotion to his business, to the manufacture of nuts and bolts, or whatever it is that he is making. I had a life-insurance agent in my office a few weeks ago who assured me in all seriousness that there was no profession, save only the ministry, which was so closely in accord with the wishes of God and the fulfillment of human ideals and so great a benefit to mankind as his own. I did not quarrel with him. I could not see it, naturally, but I did not quarrel with him because he is fortunate who feels thus towards his work. Such is the devotion which comes from real understanding of a subject, and it is that toward which I should like to help every student.

Finally, there is a fourth stage for which we all strive and which few reach, namely, the creative stage. If we are sufficiently well grounded in our subject to be able to make use of it, to make our living by it, if we are so deeply interested in it that we appreciate keenly its purpose in society, if we are really devoted to it and have learned its technique, then it becomes possible for us to create, to do new things. In science, we call this stage research. In other subjects, we call it art. It is all the same; it is creative work. Theodore Rousseau said long ago, regarding painting, that "the artist does not create the picture on the canvas; he merely lifts one by one the veils which hide it." All he meant, of course, was that the pigments on the canvas are not the picture. The real picture is the deep significance and the emotional vision that comes to those who gaze on the oils and the pigments. The picture is something beyond the material. It is that which the artist can reveal to us by means of his technique. That is exactly what we do in science although it is difficult for people not devoted to science to see it.

I now come to the point that I wish to make: creative research is the highest yet the most real aspect of living in science. It is difficult to reveal to the outsider, difficult to show to the beginning student especially, and yet it is that phase which is most important for him to see. He should understand that that greatest power of the human mind and spirit, namely, creation, can be exercised in the field of intelligence just as well as in the field of emotion.

Now I must turn to chemistry, for all of this has been merely introductory, to give you my point of view, my standards for evaluating the subject. I must first mention the usefulness of chemistry. I

judge that most of you would not be here unless you understood enough about chemistry to be convinced of its usefulness. Indeed, in these days since the war it is difficult to escape that conviction. There has been so much activity among chemists, so active a propaganda, if I may use an ugly word, for the chemical industries and chemical interests that there are few people who are not already well familiar with the fact that chemistry is the basis of almost all our industries. I shall not stress the point. I shall, in passing, refer only to a few developments of chemistry which are not well known to most people.

Almost everyone with whom I speak, for instance, is surprised by the statement that the amount of artificial leather now used in this country is so large that it would take twice as many cattle as there are in existence in this country to supply our needs for one year. In other words, the fabrikoid used last year amounted to 120,000,000 cattle hides while we have only 60,000,000 cattle in the country. The rapid development of the chemical industries to figures of that magnitude is not commonly understood. The artificial leather industry has many interesting aspects, but one that I wish to point out is that this fabrikoid, this material of which automobile seats, fan belts, book covers, purses, and a great many other things are made, comes from a relatively simple raw material. It does not require the roaming of an animal over the vast plains of the West for several years, converting grass into a hide. This artificial leather is made from wood.

One of the characteristics of the modern chemical industry and one of the things that is making it increasingly useful and valuable is the fact that special raw materials are becoming less and less essential. I could give you instances without number. Take for instance, bakelite, a material which found use first in the form of artificial amber for beads and then for pencils, combs, and other more or less decorative articles but which is now essential to every automobile, to almost every engine of any sort; it is a material of thousands, if not millions, of uses. This material is not found in nature, but it takes the place of a great many special raw materials such as amber, rubber, and porcelain. It substitutes for a great many of them and improves on many of them, but it is made from only two fundamental raw materials, namely, coal tar and natural gas. It is made directly from phenol, which comes from coal tar, and from formaldehyde, which comes from natural gas. I cite it as proof that in our modern chemical industry diversity of special materials is being eliminated and that our dependence upon the more fundamental materials such as coal, gas, petroleum, and lumber is increasing.

For another instance, we need no longer depend on the small insects of the Orient to furnish us with lacquers or with gums of various kinds because we now have lacquer made from wood, corn stalks, or other materials. The same thing is true in the textile field. The development of the artificial silk or rayon industry is nothing less than phenomenal; it is almost doubling every year. How long that will continue, I do not know, but the rayon industry stands in the extraordinarily advantageous position of utilizing a raw material, wood, which is practically inexhaustible and largely going to waste.

Nor are we any longer dependent on the cotton plant to furnish us with cellulose fibre. As long as we depended on the cotton plant, we had to take the fibre as it came, fine or coarse, long or short. The fibre is now made, miles in length if desired, in a chemical plant, and only wood is used as raw material. A great economic advantage, too, lies in the fact that one can grow about 150 pounds of cellulose to an acre of cotton per year whereas an acre of forest land can easily produce two thousand pounds. I do not intend to go deeply into questions of usefulness of this sort since they are so familiar to you. I mention them only as instances of the kind of thing that is being widely discussed throughout the field of chemistry today as striking proofs of the utility of chemistry in our modern civilization.

Essentially, what this situation amounts to and what its significance is, if you turn to that aspect of our subject which I have called appreciation, is an increasing independence from nature. Dr. Luckiesh said this morning that the progress of science is a continuous declaration of independence from nature. It is an excellent expression. We are becoming less and less dependent on the special things and materials which nature has furnished. We are able to improve on nature in countless aspects and, in so far as we are becoming less dependent on nature, we are becoming more dependent on man, on his intellectual ability, knowledge, and understanding of nature.

I cannot refrain from quoting some startling words of Dr. E. E. Slosson, which almost everyone has read. You may recall that he says, speaking of nature:

> Shall we imitate nature? Yes, when we cannot improve on her. Admire nature? Possibly, but be not blinded to her defects. Learn from nature? We should sit humbly at her feet until we can stand erect and go on our way. Love nature? Never! She is our treacherous and unsleeping foe, ever to be feared and watched and circumvented, for at any moment and in spite of all our vigilance, she may wipe out the human race.[2]

That is one of the fundamentals in the scientific attitude.

[2] Slosson, Edwin E. *Creative Chemistry*. New York: Century Company, 1919. p. 10.

I could also emphasize the enormous social changes that have come because of the increase in health and in the span of years that man lives on this earth. We have increased the average length of life from twenty-five or thirty years until now, I think, fifty-five years is reckoned as the average expectancy of life in America. Many of our social and legal institutions are still based on the assumption that when a man dies only his oldest son, and perhaps not he, will be able to take care of the estate; but most men now die when their sons are grown men. That is a thought that could be elaborated upon. I cite it merely as an instance of the social changes that have come from the application of chemistry to health and disease.

The increase in the use of machines, as such, is of no value to the human race; its great advantage is to give us leisure. But only if we use our leisure profitably, do we live more richly. Just as the increase of machinery is not the great benefit of science, so the increase of cheap new materials is not the great benefit of chemistry from the human point of view. I cannot state too strongly that a list of facts does not constitute chemistry or any science. Facts, even when they are gathered together into generalizations and principles, are not what I consider to be the important aspect of chemistry nor the part of chemistry that has had the greatest influence on civilization. I esteem not the facts but the method of obtaining those facts. It is not so much by facts as by the habit of facing facts that chemistry influences civilization.

In spite of years of experience, I am continually appalled at the unwillingness of students and of other people to face facts. And I believe that the greater part of human unhappiness is not due to accidents of nature or to accidents of birth, except in so far as these involve the unwillingness to face facts. To face facts is the first thing that chemistry must teach, and, I believe, the greatest thing that it can teach. It is the first step in the scientific method yet very few students who take a course in chemistry, or any other science, ever get any farther. An unpleasant fact is so distasteful that few people will study it; this we find to be our greatest obstacle in interesting students in chemistry. The scientific habit of mind consists first in facing facts, observing facts, finding facts, then, by the process of logic, of technique of various sorts, drawing right conclusions and finally accepting those conclusions. To accept the logical conclusion is still harder, of course, than facing the original fact. It is so difficult because it is our habit to wish rather than to think; we are much more likely to accept the result of a wish than to accept the result of a logical analysis.

The scientific method cannot be considered as mastered or as adopted until it becomes habitual with the student to accept the conclusion of a logical analysis based on facts. Whether that conclusion be distasteful or pleasant, whether that conclusion spell success or failure is entirely beside the question. It is that habit of thought which I should like to emphasize as being the essential thing that the sciences can bring to our civilization. If that is the case, then it seems to me that what we should teach in science is not the conclusions, not the facts, but the method by which the facts were obtained.

In order to show what chemistry really means, we need most of all to teach the student what is not known about chemistry, rather than what is known about it. Many people have said to me, "If you had your way, if you analyzed every compound and knew all about astronomy and biology, and could map out mechanically the whole course of our universe, there would be nothing left to dream about. Life would be unbearable; civilization would be impossible; we should all be merely machines." That expression is, of course, entirely erroneous from the point of view of a scientist and rests upon a false assumption, namely, that we can sometime reach the end of exploration. Einstein, if he has proved nothing else, has at least demonstrated that the universe can have no end.

The analogy that appeals to me most is that of a party of campers going into unknown woods for an exploration. Perhaps they tarry too long and pitch their camp too late in the evening and do not explore very far. They explore just a small piece of ground, say ten feet on each side, enough to make sure that the waters will not flood them at night or trees fall on them. They will then have explored one hundred square feet of territory, ten feet each way, but the boundary between them and the unknown constitutes four sides of a square, or forty linear feet. Before breakfast, I run out and explore a bit farther, perhaps a territory one hundred feet on a side. I can report then definite knowledge concerning ten thousand square feet of our forest. But what has now happened to the boundaries of my knowledge? They are now four times one hundred feet, or four hundred. Just as I have increased what I know, so I have also increased the boundaries, the borderland between the known and the unknown; and in an infinite universe that border becomes ever larger, never smaller.

It is my contention that when we are talking about the land that has been explored, about our one hundred square feet, or the ten thousand square feet, then we are talking about something that essentially is not science. It may be engineering, it may be human

living; but it is only in contact with the unknown that science is possible. Even more than other sciences does chemistry live on the border between the known and the unknown, and it cannot have its proper influence on civilization until it is understood in that light. Its field is not what we know, but that vast unknown that lies beyond and will always lie beyond.

I do not believe that the student who has only one year of chemistry can carry what he should into his life beyond college unless he has faced that unknown, unless he has watched men exploring it, unless he feels that the essence of science is there and not in that catalogue of millions and millions of facts which the engineers, the doctors, and others can use. Only in so far as we have had an enormous increase in chemical research and in the popular appreciation of chemistry based on that research has the point of view of our modern American civilization been changed by chemistry.

A few years ago we were quite unable to understand the German appreciation of chemistry. It was based directly on unique factors such as the possession of certain raw materials at home and in the colonies but chiefly on the philosophical conviction that the country which leads in scientific exploration and has the largest number of men living in its borderland and exploring there would earn and retain commercial and industrial leadership. I said that we in this country were entirely unable to understand that attitude, and I think I believe it was largely because, prior to the war, our concept of chemistry was that of a dry list of facts without an appreciation that those facts are themselves a romance if we consider the history of their achievement.

I need not go further, I believe, in emphasizing the fact that this type of appreciation of chemistry is the thing that I personally would like to stress rather than its utility. Of course, there are many philosophical questions opened up by recent advances which should be stressed. For instance, every student somewhere between his twelfth and sixteenth years wonders about the infinity of space, the fact that we can go outward in imagination infinitely beyond the fartherest star—and then farther. The recent astronomical theory that our Milky Way is only one nebula in a great galaxy of nebulae is startling and is not easily conceived by the growing mind. But it has an inspirational value which may last for years or for a lifetime.

Not only can we go outward forever, we can go inward forever. If we depart from the ordinary rectangular co-ordinates and make use of polar co-ordinates, we can imagine going inward toward the origin. We can go closer and closer, always inward into smaller

and smaller dimensions, without reaching a limit. It is impossible for the human mind, I suppose, to wander outward infinitely, and it is just as impossible to wander inward infinitely; but at any one point it is quite conceivable that one can go in and in and in, into ever small dimensions. That conviction has come to chemists and physicists from recent advances in the study of matter. It is one upon which every educated man should ponder.

Not so long ago the atom was hard and impenetrable. Like a billiard ball, it had no insides. It was ultimate. It is only fifteen years since that conception was first seriously questioned. We are now familiar with the idea that inside this atom is a nucleus which contains all of its mass; the rest is merely a system of electrons traveling in orbits of one size or another about the nucleus. We are now convinced that the atom is actually more empty than the solar system. In other words, the mass of the atom is concentrated in a relatively smaller space than is that of the solar system, or, saying it in still another way, the solar system is more full of the sun than the atom is full of matter. The atom is a relatively large object; compared to it the nucleus is minute. Its diameter is supposed to be about one hundred-thousandth of the diameter of the atom itself, that is to say 10^{-13} centimeters. Though this may seem extremely small, inside this minuteness is a vast complexity. Even its diameter of ten-millionth of a millionth of a centimeter must be enormous compared with the size of its constituents, for some of these nuclei contain as many as 92 protons and no one knows how many electrons. The dimensions of these still smaller parts are so minute as to have defied measurement up to the present moment.

We have no conception as to how the geography of this nucleus can be explored, but it will be explored. We are continually discovering new characteristics of that nucleus as it sends forth its various rays and projectiles. It seems now to be a far more complicated thing than we ever thought the entire atom could be. It forces us to the contemplation of infinite smallness and forces us to admit that within a single tiny point there are almost infinite possibilities of contact with the unknown.

Strange as it may seem, we do not know what matter is. We suppose, for instance, that it has the density to which we are accustomed, but let me state now a corollary of this theory of the atom. If the mass or the matter within the atom is confined to a nucleus which is only one-millionth of a billionth of the entire volume of the atom, then the density of this matter, this mass, must be a million billion times the density of ordinary matter. In other words, if you

could take all of me, eliminating the empty space and taking only the atomic nuclei that compose my substance, you could put them inside the head of the pin, and they would rattle there. You could take all this building, similarly, and easily put it into a teaspoon. The density of the stuff that atomic nuclei are made of is something quite appalling. Our idea of what matter really is, is entirely erroneous, you see. It must be a million billion times as dense as anything we have considered to be matter. We really have no idea what it is.

It is concepts of that kind, answers of that kind, and especially problems of that kind which chemistry is contributing to civilization. And so I hope that we shall see a larger appreciation of physical science, of chemistry and of physics, which will entirely revise our old concept of the place of man in nature. The ancient ego-centric idea was overthrown by the advance of astronomy, and recent advances of chemistry and of physics should accomplish another revolution. Man is no longer one of the smallest specks of dust. He occupies a very peculiar place in the universe. He has taken as his function the analysis of the universe, the mastery of it. The process of intelligent thinking as distinguished from wishing, of careful observation followed by logical analysis, is the process which distinguishes man from all else in the universe and makes him the supreme product of evolution.

It is for that reason that I am insistent that the student consider not only that sulphuric acid in H_2SO_4 but how that was discovered, what S stands for, and what sulphur is in the final analysis. I am firmly convinced that this point of view of chemistry will in the long run have a much larger influence on our civilization than will any of its products, and I therefore insist that there is much more to be learned from chemistry than a list of facts.

At the Pennsylvania State College we have a special course for Freshmen in the School of Liberal Arts and the School of Education, which is intended to tell them nothing that they are likely to forget, but which is intended to meet the purposes of a student who is not going to learn the technique. It is true that the student who specializes in chemistry and the student who is going into medicine or agriculture or engineering must have something more than that; he must learn the technique, and he must therefore have a technical course. It is, nevertheless, my conviction that it is that student most of all who needs the liberal course in addition to his technical course, because most of our chemists do not understand the larger aspects of their subject. These broader aspects are essential for a liberal education. If I thus define chemistry and if I thus emphasize its place in

civilization, you will be much more ready to grant that the chemist can be devoted to his subject and that, in so far as he is facing the unknown, he is living much more fully than do people whose world is serene.

Finally, you will allow me also the inspiration of creative work in this subject. I cannot see how anyone can evaluate the subject of chemistry without understanding its research phases, namely, those tireless, unprejudiced, unemotional inquiries into the nature of the universe. If one takes such a point of view and works with complete devotion, useful results develop quite automatically.

Creative research is not confined to chemistry. It may be an instance of creation for the chemist or the physicist to discover a new type of ray, such as the X-ray. He then forgets it. It becomes the engineer's creative function to utilize the X-ray in his work and make it available to the doctor, who in turn creates new effects by its use. Thus a whole series of creative efforts follow one another in the various professions. A machine, a device, a material is furnished to mankind as a result of a chain of co-operation from various professions, but at the bottom of all of these lie the two sciences of chemistry and of physics, the essence of matter and the essence of energy.

Perhaps you have been surprised and displeased by my emphasis on rather intangible aspects of chemistry. The reason I have treated the subject in this way is because we already have so much emphasis on the industrial applications, on the enormous profits that are to be made by the country or the company which engages in chemical industry, on the good salaries that are to be paid the students who specialize in chemistry. Those things have been said time without number, and I therefore did not feel justified in taking your time by a recital of the practical, economic, and useful aspects of the subject assigned to me. I have therefore spoken about these more intangible aspects which, I say again, are to me the most important and from which the influence of science and chemistry radiates.

Parent-Teacher Association

Why Stop Learning?

E. H. Lindley[1]

I RECALL very well what my good friend Dr. Thompson of the Ohio State University said about college presidents in relation to their learning. He said, "We are so busy running errands that we develop a certain aloofness from intelligence." So I may be a very unsatisfactory guide in this discussion of adult education, but I remember the old German proverb, "He who rings the bell cannot march in the procession."

The other day Senator Borah was seen walking across the rotunda of the Capitol at Washington, and a dear old lady who was touring was somewhat perplexed. She walked up to the distinguished senator and said, "Are you a guide here?" He replied, "Madam, there are a good many people about this place who think I am not very much of a guide."

With these apologies I wish to call your attention to what I think is profoundly true, the fact that our race for countless generations has been the victim of a most baleful delusion, namely, that childhood and youth are the only periods in which human beings may learn much, that it is always too late to be what you might have been. I recall in my undergraduate days coming under the spell of William James, one of the greatest psychologists. Many of you remember the chapter on habit, in which this man of the open mind, who was an "eye" of the universe, said that before twenty we have acquired all of our personal habits and all of our professional habits before thirty, that most of the conceptions that we shall have to the end of our lives are the conceptions that we got not later than our college days, and that, therefore, in every field excepting our own special vocation, perhaps, old fogyism is our inevitable destiny.

The psychology of the last two decades, however, has begun to explode that delusion, and I think it constitutes a great emancipation for our race. Thorndike recently has shown that we may go on learning for a long time, at least into middle age. A person at forty-five may learn as well as he could have learned at eighteen, but not so well as he could have learned at twenty-four. Then the curve

[1] Chancellor, University of Kansas.

falls across the years, dependent on the character of the individual and his habits of mind. There is, therefore, a strong presumption that we may learn as long as we live.

Professor Stone, of Stanford University, has discovered that a rat, the equivalent of a seventy-year old man in mental age, can still learn. I submit that a white rat, that is really as washed out mentally as it is externally, ought not to have anything on us. We, too, may learn as long as we live—what an emancipation!

More than that, in view of the tremendous flood of new knowledge in every field, we must learn as long as we live. In fact, we are a good deal like Alice in Wonderland—we have to run very fast in order to stay where we are. I believe it was James Russell Lowell who said that Methuselah was a lucky dog—he did not have much to learn and he had a very long time in which to learn it. Nothing like that is our fortune today. You would not trust anyone dear to you for a major surgical operation to any surgeon who had not been at a clinic within three or four years to bring himself abreast of the times. And I venture to say that the advances in surgery have been no more rapid than they have been in many other fields.

The suggestion has been made that the arrest of pupils in their progress is, in a large measure, due to the arrest of the teacher. When a teacher stops growing, the pupil is likely to stop growing even though the child is on a lower level. Somehow, there is a wireless that carries the message from teacher to pupil that the cemetery is already occupied. We must learn as long as we live.

We can learn best by system. I have often speculated as to the saving of time effected by good traffic ordinances such as you have on this campus. On State Street in Chicago on a busy day there is a great throng of vehicles and persons at the crossing. At a signal everybody stops, and men and women fume because they cannot get to Marshall Field's quite so quickly, before somebody else gets there perhaps, and there is some irritation. Yet everyone knows that he gets to his destination more quickly by virtue of that enforced order than would otherwise be possible in the jam. We live in a jam like that, pressed by every kind of stimulus imaginable, in far greater numbers than any other generation has known. A little time spent in systematizing, in setting up traffic regulations, and being our own traffic policemen, justifies itself up to a certain point in formal education everywhere.

I have often thought of it in terms of the packing of a trunk by a boy going away to college. You know how a boy pitches things into a trunk. He will throw in his things in the order of their momentary

interest. If it is warm weather, all the warm weather things go in, and the things needed for the winter are forgotten. And then mother comes and takes everything out and puts them back in order. She has a calendar in her mind, and when she gets everything packed, you could not put a visiting card in and get the lid down. Everything is there, in order, and there is a tremendous gain in the capacity of that trunk. System is a great advantage.

Ten percent for supervision and order in business circles is considered not a bad expenditure, and it ought not to be bad in the ordering of our mental life. I think the greatest enemy of happiness and health and of mental progress is mental confusion. And in extreme moments mental confusion reacts on the individual to generate many kinds of incipient nervous and mental disorder. Order is a life-saver.

We learn only through our own experience. I remember a very brilliant woman, whose children were friends of mine in my boyhood, who boasted that she got the lessons for her children every evening. She thought that was a great accomplishment. The children were more than ordinarily capable, but they did not pan out very well. That mother, with all her good will, could not serve vicariously in the education of her children, and nobody else in the world can.

You remember Goethe says that you have a great inheritance but that you have got to win it. There is only one kind of education, and that is self-education. You can lead a boy to college, said Mr. Dooley, but you cannot make him think. And if he does not learn to think, if he does not win this power by his own effort, learning never becomes a part of his life. So the only education, after all, is self-education.

We who are interested in formal education ought not to be too proud nor to be inclined to "high-hat" other kinds of education experience. It was Emerson who said, "We send our children to the schoolmaster, but it is his school fellows who educate him." School fellows? Yes, and posters and the movies and the radio and all this host of things that shapes the plastic life of childhood. A good many people are worried about the movies, and they ought to be. The way out is not to suppress movies and the radio but to capture them, for they are capable of canceling some of the work of the best teachers.

We learn by experience—our own experience. The final adjustments to the tasks of life can never be completed in the schools. The final delicate adjustments in all the great vocations have to be won in the actual scene of practical operation. Employers often ask if we have graduates of our School of Business who are ready to go

into their banks or counting rooms. We tell them, "No, we do not pretend to provide a finished product. What we do is to get a man ready with the coarse adjustments and the fundamental preparation, but he must become a Freshman again for a little while, in the counting room, in the business itself."

At Columbia University, it is reported, there was an argument on one occasion as to whether a man could be taught to swim outside the water. And the man in charge of the swimming class, a very gifted teacher, said he would like to try the experiment. He took a precocious student and taught him laboriously and carefully all the movements of swimming. On the appointed day of test the young man went into the pool and promptly sank. When he came out he said, "I am sure the movements are all right, but the water was unexpectedly loose." That is always true of the water of experience; it is never quite what you foresee it in academic days.

We ought to have a good deal of sympathy with the men of business who complain that our graduates are not quite adjusted to the job. We do not pretend that they should be, but we should remind employers that we have shortened their period of apprenticeship. We have so enriched their preparation that, when they do make the delicate adjustments, they will go forward much more rapidly.

Henry Ford has said of the school of experience that the only trouble with it is that the course is so long that by the time one has graduated he is too old to work. That is the justification for the enormous expenditure for formal education.

The Bell Telephone Company has recently made a study of more than four thousand of its employees in the higher ranks. It found that a man with a college training will obtain a certain level of income in their employ within six years which, on the average, requires fourteen years for a non-college man to reach. This is an important difference from the standpoint of the Bell Telephone Company and the man himself. The Company found, too, that the men whose scholarship ranked in the upper ten percent are the ones who continue to rise and to grow for a longer period than the others, and that those who belonged to the upper twenty-five percent, on the average, will go farther and win a higher level of recognition than those in the lower ranks. There are brilliant exceptions, of course, to all these cases, but they are fine arguments for formal education properly pursued. So we have no apologies to make for the enormous emphasis that is placed on formal education.

We must recognize—we who are chiefly concerned with formal education—that it is not the only kind of education that is going on

and that it needs to be supplemented; it is only auxiliary, if you please. I believe that in years to come the so-called self-educated man will still win his way by genius. We will take off our hats to him. The supreme height of culture attained by a man who, as a carpenter, had but a little contact with a few of the learned doctors should be a lesson to us. It ought to keep us very humble, we who may have degrees. The great university is the university of experience, and we can never wholly replace that. Therefore, we may be quite sure that the final, delicate adjustments will be won in the world of actual experience, and we should teach that to our pupils, lead them to expect it, and teach them to go into the world very humbly.

The other day a son of one of my trusted counselors went to the Cleveland Trust Company with letters that would open almost any door for him. The president said, "I suppose you want to sell bonds right away?" And the young man said, "No, I just want to go to work." You know what the prophecy of that remark and that attitude is. Going in as a Freshman but with two academic degrees, the man is on his way to success.

We must learn before we can hope to earn. One of the most pathetic things that has developed in the first phases of the evening classes in cities has been the eagerness with which these young people, after a few lectures on citizenship and the like, begin to peer into the pay envelope to see if any change has taken place.

A little while ago a boy came to us from Oklahoma and said, "I want to be an oil engineer. How long does it take?" I said, "Four, five, or six years." His face fell, and he replied: "I have saved up money for just one year; I thought maybe I could do pretty well in a year." I liked the boy and I thought it would be worth while to spend some time with him. We opened the catalogue to the studies required for an oil engineer, and I said, "Now I would like your comment on these subjects. You would need to have a little geology?" "Oh, yes, I would have to have geology if I am going to look farther into the ground and with more certainty than anybody else. I want to be the best oil engineer I can become." "Well, then," I told him, "you will need geology, you will need chemistry, and you will need certain courses in engineering." When I got through with the list he said, "Can I do that in six years?" And I replied, "Now you are started."

There are no short cuts. When Webster made his reply to Hayne, one of his distinguished colleagues asked Webster how long it took him to prepare that speech. Webster said, quite seriously, "Forty years."

Patrick Henry went to Thomas Jefferson, according to the story, and said: "My friends think I would make a good lawyer. Do you think it would be worth my while to stop everything else for four weeks and get ready?" Jefferson said, "I think you would make a good lawyer, but I think you ought to allow yourself a little more time; take six weeks." When I told that story to one of our professors of law he said, "Well, that in a rough way measures the difference in the complication of the law and the necessity of the preparation in Patrick Henry's day and ours." In a law course, three years are superimposed upon the two-year college course, requiring at least five years after high school, and then a man is just getting under way. We must learn before we can legitimately hope to earn.

A little while ago I went through a great furniture plant in my old home town. I saw a man at a machine whom I recognized after all these years as Charles Frye. Charley Frye was a schoolmate of mine up through the seventh grade. I remember very well when Charley said that he was quitting school; he was going to get a dollar a day, and he scorned us who were going on with our schooling. A dollar a day was good pay for a boy of that age. I inquired of the proprietor about Charley. Charley's earnings today, allowing for the difference in the value of purchasing power of the dollar, are very little better than when he left the seventh grade. Charley by that choice long ago decided that his children should live on a certain economic level, with all the restrictions pertaining thereto, because somebody had not warned him in advance of the tragedy of the short cut.

All about us are young people in the public schools who are lured by the desire for quick reward. They want to get a job that pays well at the start. Somebody ought to make it plain that those jobs that pay best at the start are nearly all box canyons, that they do not open doors of opportunity, and that, on the other hand, those vocations that have the largest possibilities of development in power and influence and economic return are precisely the ones that require the longest period of preparation and the longest period of "thin living." That is true of all the learned professions. It is easy for youth with its shortsightedness to overlook that or to be uninformed about it, and I think that one of the finest services that every good school renders, is to warn these students who are eager to get out into work, of the tragedy of the short cut. All about me today I see men at work who have talent that, if properly directed, would have enabled them to live on a much higher level and to make a very much better contribution to society as well. So their loss is our loss.

The other day at Washington I heard a man say that the leadership of America in industry and commerce is not due to mass production, important as that is. We are past masters in that, but Europe is learning that from us. It is not in extensive use of machinery to supplant human labor. We are leaders, it is true, but Europe is copying that also. He said the secret of American leadership is our recognition of the importance of the human factor in production. We have gone farther than any other country in recognizing that labor is never a commodity, as Europe always taught; that the future sources of wealth in this country are to be derived, not from any great addition to machine production, nor to mass production, nor volume production, but out of a more delicate and intelligent adjustment of all the human factors involved. It is a problem of human engineering. This man also said that this field is so nearly inexhaustible in its possibilities that we have a right to think that one of these days it will be possible to so control the factors of production through this recognition and adjustment of the human factor that we shall have no cessation in our wealth production, and that cycles of depression shall no longer be unavoidable. Now, that is a long story and it sounds utopian, but I find that President Hoover has something like that in his mind and that he has uttered it again and again. Every time you lift a man from a lower level to a higher level through a proper training you are making a contribution not merely to his own welfare but to society.

It is an amazing fact that when the cost of a needle and thread, say ten cents, is set over against the cost of a sewing machine, the value of that sewing machine in terms of its productivity is about three thousand times that of the needle and thread. And yet, the sewing machine can be bought for less than thirty dollars. Who gets the difference? Why, society gets it. We are all enriched by that.

Steinmetz used his brain in a most unique way. The other day I had the honor to spend some time with the consulting engineer of the General Electric Company. He is the man who found Steinmetz his niche in that great organization. He released Steinmetz' extraordinary energy. And I saw an estimate to the effect that Steinmetz had added probably twelve billion dollars to the wealth of the world. Steinmetz got whatever he wanted, but he got a pittance; whatever they paid him was an insignificant fraction of the wealth that he had produced.

Raw material? It does not make any difference, if you have trained men, whether a particular kind of material fails; creative chemistry will give you something better. You in this great center

all know magicians like your great chemist who was here and is now with General Motors. You know what magic there is in this uttermost development of talent and the organization of it in production. It makes one dizzy to think of its unlimited powers.

Now, what I am trying to say is that not merely may these things be accomplished in the period of so-called youth, but that again and again it has been demonstrated that people may be born again to new powers. This is inspiration to all who have passed their youth. I think one of the most important things that is happening as the result of all these studies is the rediscovery of age. Just a little while ago Dr. Osler, with a twinkle in his eye, said that after a man is forty he ought to be chloroformed. He said it with a twinkle in his eye, but the twinkle did not carry around the world, and his remark paralyzed the efforts of thousands. They said, "What is the use?" Fatalism gripped them again. And industry and commerce all about junked a lot of their choicest men under the spell of that delusion.

Now we are beginning to realize not only that old age is the time for counsel but that there are certain kinds of things that people in middle age and beyond can learn better than they could have learned in their youth. We have the prospect of an enlargement of human efficiency and human happiness by the right employment of those who have passed middle age. We are just at the beginning of this movement, but I submit that we are going to do for age what was done twenty-five or thirty years ago for adolescence—rediscover it and revolutionize our whole attitude toward it. You are going to have the spectacle of men and women freed from the immediate cares of business and home life, going forward with renewed spirit of life to new conquests. Adult education is based on such numberless experiences that I think we are quite convinced of its importance and its value. We are coming to see now that the spirit of youth is probably the spirit of learning.

The last time I was in southern California I got an impression, which doubtless many of you have had, that over against a marvelously active and resourceful people, who are building a great state, there are multitudes who have quit; who have retired. You see them standing on the street corner waiting for a street car, and when they get it, they do not know why they want it. They have died at the top, although the undertaker does not know it. You cannot have youth, you cannot have the fundamental human quality when you have stopped learning and have lost the spirit of inquiry.

In contrast is the testimony of many instances. Sargent, the great portrait painter who died not so long ago, stood before one of his own

portraits when he was more than seventy years old, unaware of spectators who heard him say, "Sargent, you old fool, go home and learn to draw." And he actually went home and took up the most gruelling lessons in drawing to improve his technique. Michelangelo, blind and in his eighties, went into one of the great buildings that he had made immortal. He could not see any more, but he ran his hands over those exquisite carvings, and with glowing face he said, "Why, this is a marvelous new world. I did not know about this. I must explore."

A few years ago there came into my office at the university a man with twinkling eyes. He said: "My last grandchild is here entering the University. All my children have been graduated here. Now all the grandchildren will have been connected with the University. I was here fifty years ago and reached the sophomore year, and I have never ceased to regret that I did not get my baccalaureate degree." I said, "Why don't you get it now?" He stared at me, incredulous. "Why," he said, "could I do that now?" I said, "There is nothing in the constitution of the state that says you cannot." He entered the School of Engineering and became an inspiration on that campus to all the other students. On a certain commencement day I had the thrill of presenting a diploma to Frank Lindley Weaver, eighty years young. His story was broadcast by the Associated Press, and I received many letters from people saying, "Is it possible that a man or a woman may go back after forty or forty-five and do some new things?"

People are doing this very thing all over this country. Mothers and daughters are sitting in the same class, fathers and sons. It is a renaissance! And in the progress of adult education three hundred and fifty commercial organizations in this country are carrying on correspondence work, extension work, and the like. A million and a half persons are in correspondence courses of the more elementary sort. There are evening classes without number. You have them here, of course, in your city, and it is sweeping the country. The time is coming, I think, when anybody in a community who has public spirit will be a little on the defensive if he or she is not each year pursuing in some systematic way some line of study. It is the best guarantee of continued youth.

So why should we stop learning? We have the brain endowment. Modern science tells us that many structural changes, physiological changes, undeniably come with age that limit us in certain directions. I am not saying that one of seventy can learn as well as one of twenty or twenty-four. But I do say that it is probable

that in some fields requiring judgment and the like, he can learn better than he ever learned before, and in other fields he need not be hopeless of acquisition. If he has the zest of conquest, he has the secret of the satisfactions of the intellectual life.

As a people in this prosperous part of the world, I think, we ought to be on our guard. I rode across Kansas with Ida Tarbell a few years ago. She look out on the rich fields and said, "I am a little worried about the future of civilization in the Middle West. I am afraid that people out here are going to become very complacent with their prosperity and that they are going to become hard." And I thought that she meant by hard what we mean by soft, that they are going to be victimized by a peculiar logic that somehow a second car, or a third car in the family makes a contribution to the enrichment of the personal life of individuals; that somehow the multitude of one's possessions may take the place of this precious spirit of the learner, which, if we have it, enables us to meet life situations joyfully and with mastery.

Dorothy Canfield Fisher, in her book *Why Stop Learning?* from which I borrow the title, who belongs to us in Kansas and to you in Columbus, came back to us last year for commencement and said these things:

> Although we do not see it with the vision of the flesh as we see Valley Forge, our country is at this moment fighting for its life at a turning point in its existence. It is shut up within a prison of prosperity where the older doors of the spiritual and intellectual life are locked. If it cannot burst open a new door, many new doors, and find its way to air, it will smother to death beneath its material possession, smother in its own fat.

Do we, perhaps, see in this unceasing effort toward self-education the crack of daylight in our darkness which points out one door that is not entirely closed?

Some Tentative Principles of Program-Making

Julian E. Butterworth[1]

I. Objectives should be established.
   A. A parent-teacher association, like any other organization, exists for certain purposes. A formal statement of those purposes will be:
      1. To enable members to direct more effectively their activities to the achievement of those purposes.

[1] Cornell University.

2. To stimulate a critical study of those purposes that might otherwise be accepted merely because of traditions.

B. Since, so far as I know, only one attempt has been made to set up objectives of parent-teacher associations on a scientific basis, the results of that study will be accepted tentatively.[2]

1. The objectives set up as a result of that study are:

a. To give association members an understanding of the objectives and methods of education

b. To teach members to apply those objectives and methods to the out-of-school environment

c. To give, under certain conditions, school officials' judgment as to where the school fails or succeeds

d. To facilitate acquaintance among parents and teachers

e. To aid in educating the community as to desirable aspects of the school's program

f. To raise funds under certain conditions

2. It is important that there be continued study of the objectives of such an organization. Social needs may change; some new organization may develop to deal with certain objectives now considered desirable for the parent-teacher association.

3. It is especially important that attention be given to this problem for a time.

a. The study of objectives referred to previously deals with the "general" association. Study of high-school, elementary, pre-school associations is needed.

b. Some limitations in this study may be overcome, for example, a study of associations that have gone out of existence may throw much light upon the relative value of objectives.

4. The relative importance of these objectives will vary from community to community and from time to time in the same community, for example, in a wealthy community the raising of funds would be unnecessary, in an extremely poor community probably desirable.

II. The program is the means of attaining objectives.

A. The entire program of the association should be directed to the attainment of the objectives. The program consists of:

1. The regular meeting, which often includes papers, talks, formal addresses, demonstrations, discussions, etc., of topics

[2] Butterworth, Julian E. *The Parent-Teacher Association and Its Work.* New York: Macmillan Company, 1928. pp. 57-77.

that fall within the accepted scope of the association's objectives.

2. The business session, devoted to a consideration of ways and means of achieving the objectives of the association, including the proper financing and development of the organization itself.

3. Activities, directed through officers, committees, or the entire organization, directed toward getting such changes in educational conditions as are considered desirable.

III. Building the program involves:

A. The meeting of needs is the basis for action.

A parent-teacher association will, therefore, find the key to an interested membership and a useful program in the needs that face the particular community it aims to serve.

1. It should, in general, confine itself to those needs that are within its accepted objectives. There is danger that the parent-teacher association may try to cover too wide a field.

2. Some educational needs are obvious and require only statement to have their importance recognized and accepted. However, specific data are often helpful in emphasizing their importance; for example, what children read, the value of a scout organization, etc.

3. Other needs, on the other hand, are of such a character that the research activities of highly trained specialists are required properly to locate and define them; for example, the value of the Schick test, economic administration of the schools, etc.

4. Still other needs may be discovered by the alert person having only average ability and training, for example, playground facilities, wise use of leisure hours, home-study conditions, etc.

B. The necessary study may be made by a special committee of the association.

1. The committee should consult freely with the principal or superintendent.

2. This committee may utilize data collected for another purpose. Its function is then to organize the material for presentation to its own group.

3. It may collect data through its own efforts.

4. The data having been collected, they should be so organized as to show the degree of seriousness of the need, define specific needs to be met, etc.

C. The program should, then, be built around these needs.
1. The regular meeting should give opportunity to present the needs, to develop an awareness of the members regarding them, and to consider ways and means of meeting them.
2. The business session should consider the business aspects of the matter: the appointment of committees to deal with problems and the financing of these activities, as well as the forwarding of the entire program of the association.
3. Committees, officers, and other individuals may then carry on such activities as will bring the changes desired, for example, collect more data, confer with officials concerned, etc.

D. There is a danger that state or national programs will not deal with those problems that are most pressing in local communities at the time.
1. There are some large problems; for example, health, that are so common that a state-wide or national program is probably useful.
2. As a rule, however, these organizations can be most helpful by: (1) showing the importance of using sound principles of program-making, (2) giving detailed suggestions of procedure, (3) publishing examples of good program-planning, and (4) generally stimulating an interest in this activity.

E. Since it is the remedying of situations considered educationally undesirable that is the primary concern of the association, it is important that:
1. The year's program be directed toward a few rather than many needs. Diffuseness in discussion and activity is perhaps one of the most serious weaknesses in the program-planning of associations.
2. The element of continued interest of members in the problem should be recognized.
3. Account be taken of the fact that reforms requiring the changing of people's ideals should not be pushed too rapidly and that time be given them to get adjusted.

IV. Accepted principles of good teaching should be employed in putting the program into effect.

A. If the needs are genuine, the first step to the development of motives has been taken. This is the first step in good teaching.

B. Participation should be carried as far as possible.

1. A discussion is better, other things being equal, than a lecture.
2. A demonstration is better than a description; for example, in oral English, value of dramatics, etc.
3. Give everyone, if possible, something to do.

C. In the arrangement of the program recognize that entertainment in reasonable degree has a legitimate place in maintaining interest.

V. The results of the program should be appraised.

A. Evaluation of the points in which the organization has failed or succeeded is necessary to intelligent progress. Some rating scale is therefore useful. An illustration of what may be developed along this line may be found in *The Parent-Teacher Association and Its Work* referred to previously.

Physical Education and Health

Are Interscholastic Athletics a Nuisance?

Karl E. Whinnery[1]

There are indications that an increasing proportion of those interested in our educational institutions are convinced that our present system of interscholastic athletics is not an unqualified blessing. It is obvious to anyone who thinks about the question at all that the bad features of this activity are due to overemphasis. In many schools this overemphasis holds before all the pupils a wrong idea of values and, in some instances, even results in a definite waste of time which should go to the real work of the school. This waste is due to the unnecessary time given to "pep up" for games and in equally unnecessary celebrations after victories. Such practices can keep students in an excited state of mind throughout a major sport season. The attention and adulation given star athletes is often more than they can stand and has serious results on individual characters.

Granted that we have such situations, what can be done about it? It will be said that this problem is forced upon us from the outside and that there is very little that can be done. It is true that many people in our communities are very much interested in our games and like to see the home school win. They are more concerned than the students themselves. In our school on the average less than thirty percent of the pupils attend our interscholastic contests. Those who do, accept victory and defeat in a more sportsmanlike manner than the adults who attend. But even with this great interest in athletics, it is a very small percentage of the people in any community who would subscribe to the idea that the real work of the school should be sacrificed for them.

There are, however, too many valuable features in interscholastic athletics to scrap the whole program on account of its weak points. The first thing for those in charge of schools and athletic programs to decide, is just what athletics do contribute to education. First, let us stop making unwarranted claims for them. There is no agreement about the physical and moral value of those taking part. Some people say that they quite definitely contribute these values, while others are just as sure that the effects are bad. The number of students

[1] Principal, Sandusky High School.

involved, however, is too small to justify such an outlay of time and money even if the benefits as claimed were conceded.

If athletics are properly controlled, they do make two valuable contributions to schools. Test the spirit of loyalty and co-operation which go with a sensible support of the school team. The school colors, the lauds, and so forth, may offer a rather intangible contribution, but it is valuable nevertheless. The second, and most important, is the recreational value for player and spectator. There are many worse things to do with leisure time. Indirectly, the big team of the school inspires the formation of many lesser teams. This multiplies the number who take part in the sport in a milder and probably more beneficial way.

Since there are benefits in school athletics, it is the duty of those in charge to save that which is good and try to do away with that which is objectionable. We must play down athletics to their proper place in the general school program. Their chief value is recreation which, although important, is secondary. We must see that our pupils understand that a game after all is only a game and that work comes before play in school as well as out of it.

Follow-up Work in the School-Health Program

Margaret Bell[1]

There is no escape from the fact that coaches, physical educators, health educators, and playground leaders hold a most responsible and opportune position in the development of the child. Whether or not we rationalize ourselves out of our responsibilities, our position of vantage makes us responsible for the following up of certain defects of function, physique, and character which we alone, of all the interested advisers with whom the child comes in contact, have the opportunity to observe.

The goal of all education is the development of sound, thoughtful leaders. The best leaders are to be found among those who approach the fulfillment of their potentialities through systematic living. To approach this ideal, the infant must work toward intelligent self-direction in healthful living that will insure efficient living throughout life. Everyone who deals with the child from the beginning must hold and reinforce this ideal, for without physical stamina the organism as a whole is unfulfilled. All the other desirable characteristics that contribute to a satisfying life are based on radiant health and not

[1] University of Michigan.

simply on freedom from disease. Society may be reorganized, the scheme of education of today may be torn to pieces, still there will never come a time when the individual's outlook and satisfaction in life will not be enhanced by a physical capacity to live his life to its utmost.

This, then, is the first responsibility and the foremost satisfaction of each individual. If the analysis of the perfection of certain attitudes that contribute to successful life is continued, positive health is basic. Next comes the attitude of the individual toward his obligations to work, to family, and to society and after that the attitude of the individual toward society through the satisfactory use of his leisure time. Lastly, I should say that faith or religion—a belief in spiritual life—is essential.

With such an outline of life, the opportunities of leaders in our field stand revealed. It takes very little analysis to select those qualities—health and recreation and citizenship—with which our profession is most concerned, or to decide whether we as physical educators shall consider ourselves to be health leaders or leaders in recreational activity.

For the sake of reconciling the two extremes of attitude, that which classifies us as health educators and that which classifies us as physical educators, playground leaders, or coaches, we might limit our specific interests to the development of self-direction toward healthful living in the child. If we consider ourselves health educators, we put ourselves in a position where the understanding of all principles underlying the motivation of health habits, including exercise, is essential. Exercise is one of the few essential habits, essential to growth, development, maintenance of health, and correction of defects. The health educator must understand the recreational values of play and the part that such relaxation plays in developing nervous stability. He must also understand that athletic competition and leadership play their part in the evolution of citizenship.

On the other hand, if we prefer to consider ourselves physical educators, activity leaders, or coaches, we must agree that the education of the child, from the pre-school age on, demands of all teachers an intimate knowledge of growth and development expectancy, and a familiarity with the psychological interests of the child if suitable programs are to be applied. We must deal with health, if only through the perfection of habits of exercise, and with the correction of those physical defects which exercise can improve. We are responsible for the development of athletic and physical skills which will lead to the development of life-long athletic hobbies — life-long

hobbies which contribute to health and recreation. We are responsible for the development of good leaders whose sense of fair competition and sportsmanship will be above reproach.

In conjunction with this, athletic directors, and most men as well, believe that participation in athletic competition is essential to the development of character—self-control, self-confidence, and leadership qualities. Psychologists may agree with Tunis that the "carry over" of these qualities into everyday life is questionable, but the average man who does not believe that his social armament has been increased by his athletic experience is rare. When it comes to the education of women, whose training has always been individualized, there is little doubt that experience in team-game competition is perhaps the most potent device for exposing these traditional individualists to some of the situations that society will force them to meet. Women as a group are brought up as "only" children as far as team play or co-operative effort is concerned. But society is becoming more complex; women are getting out of the home into the world. They have a great deal to learn about self-control, tenacity of purpose, self-assurance, and the "give-and-take" of life. They are short on those qualities that contribute to nervous stability. Woman is yet too much the novice to have ingrained in her those qualities that can be summed up in the term, "team spirit." One caution should be indicated here: Do not try to do too much team play with girls who have not developed sufficient skill to have some pride in performance, or the whole beautiful picture will dissolve as a dream.

Recreation! Undoubtedly one of the fairest criticisms of American education is that our nation as a whole is not trained to use its leisure time in a conservative way. All educators should be conscious of the opportunity to perfect the child not only in the work of his profession or vocation but also in interests that can be pursued in leisure time.

All of us who have had experience as leaders in big playgrounds—in the settlements, in the schools, in the wealthy preparatory schools—know the unlimited influence that comes with the confidence of the pupils. The word of the idolized leader is law—law which supersedes every other influence. This influence leaves its indelible mark on the adolescent especially. The effect of this stimulating contact on the average coach or playground leader is to make him seek further knowledge to justify this overwhelming confidence. I could name a number of men and women, whom I knew as instructors in the South Side playgrounds of Chicago, who have been inspired in this way and who are now outstanding administrators.

From this preface it is easily seen that I have a great confidence in leadership, based, first, on the personality and skill of good leadership and then on faith in the importance of the leader to society. Specific education is important, but the qualities of personality, leadership, and skill are as essential to this program as is physical capacity for a full life.

To summarize what I have tried to say up to this point: The coach, activity leader, playground leader, and physical educator must be familiar with the general principles of education that underlie the training of the age groups with which he is dealing. He must be an athletic or activity leader versed in the skills and the training of skill essential to physical achievement and satisfaction in performance. He must recognize the place of exercise as a fundamental health habit, as a corrective measure in growth and development. He must appreciate the value of play as wholesome recreation, as an athletic hobby. He must see the opportunity for developing straight-forward leadership and know that there is no better opportunity for developing the right attitude than the stress of competition. The health educator must also be familiar with the fundamental educational principles that underlie education in general. He must be grounded in the scientific facts involved in the normal growth and development of the child and understand those habits that are essential to the best accomplishment for the organism as a whole. The health educator with all other educators is promoting standards of citizenship to bring all society to a higher stratum.

Such responsibilities warrant our greatest concern for the education and selection of leaders for these positions of trust. In the training of this group, either as physical educators or health educators, the background must necessarily be identical. But one group will stress the activity objective, while the other will stress those principles which underlie the motivation of all health habits. Not one must be allowed to lose sight of two facts: First, that all self-motivation must be acquired as early as possible and, second, that the innate interests of the child appear early and remain over a long period of years and are closely bound up with joy and satisfaction in physical achievement.

It would be fair to follow up this diagnosis with a prognosis and in doing this I shall employ certain ideas that Dr. Cooper, the new United States Commissioner of Education, expressed in a talk at Michigan a short time ago.

What is the ultimate goal in the educational field of the coach or the physical educator or health-education teacher? The progress

of the individual in our educational system depends on his training, interests, ambition, and success. The trend in certification of teachers is working toward the goal which demands a bachelor's degree to teach in elementary school, a master's degree for high school, and a doctor's degree for the college and university position. This trend is confirmed by the tendency to increase the course of the normal schools from two years to four years and for normal schools to confer bachelor's degrees. The next tendency is to plan definite courses of study for those who intend to progress through supervision into administration and for those who plan to progress through specialization into further study and research in academic work. By the field of specialization, I mean that the health educator might pursue work toward a master's degree in public health or he might concern himself with the justification of suitable health habits from a physiological or psychological point of view. The physical educator could continue his studies in the field of testing—the acquirement of skills, and the standardization of physical achievement tests. The playground leader will probably pursue his advanced work in the psychology of recreation or the social significance of leisure time.

The field of our work has been outlined. The common objectives of education have been touched. An effort has been made to indicate the direction for individual progress. One other point remains to be emphasized. We are specialized leaders in a field whose general principles should be familiar to every layman. So closely are these principles bound up with satisfaction in life that it is our duty to make every effort to acquaint all those with whom we come in contact with the scope of our professional responsibilities. The natural way to begin this missionary work is as a part of the school faculty to train our colleagues in these matters. Soon there will be less necessity for this than there is at present, for all schools of education are beginning to require orientation courses in this field. In addition to this, the tendency is not only to ask for a certificate of health but to inquire into the health habits of the individual and into the personal history of extra-curricular activity. After that, the confidence of the school faculties and administration must be gained through the work being well done. The next natural contact is with parents and the parent-teacher associations. Many of us neglect the big opportunity for meeting parents that comes about through observations of the child's physical condition. Some of the most important contacts are made in this way.

The natural way to begin this work is to co-operate with the school faculty as part and parcel of the whole. Sometimes I even

believe that the entrée has to be gained through academic teaching. The confidence of the school faculties and administration is gained through having common interests with them. The next intimate natural contact is with the parent-teacher association through the students. Since we are able to make some of the best observations on the physical condition of the children as we see them at their play, that is, fatigue, shortness of breath, undeveloped skill and interest, and lack of endurance, we must see that these conditions are attended to thoroughly, and that contacts with the parents are made.

We must also go outside these natural, immediate contacts and work with civic authorities in Kiwanis, Rotary, and business and professional women's clubs. We must work with the church groups, the Scouts, and Campfire groups. We must support our professional organizations. We must be generous with our time. We must teach, talk, promote, write, and those of us who are capable must do creditable research. It is through such policies, faith in service, a desire to serve, untiring, personal effort, the understanding of human abilities and needs, an elevation of standards, and a unity of effort that the medical profession has the respect and confidence that it holds today. It is only through such a systematic scheme that our profession will assume its proper position in society.

Modern Physical Education

Jesse Feiring Williams[1]

The implications of my topic are many, its contrasts, multiple. Is it anything else than pride that leads modern human beings to regard in superior vein their own time and creations? History may reveal unexampled sources of power, beauty, and wisdom, but they are naught compared with modern machinery, modern art, and modern knowledge. A writer on ancient physical education must be more than a tourist to centers of physical education and yet he has wares of little merit to sell. The present may be one that Matthew Arnold described as wandering between two worlds, the one dead, the other powerless to be born. But history has the curious trick of emphasizing the past, which we moderns like to forget, and the other world, that is ever powerless to become the now, never succumbs to our blandishments.

The contrasts between ancient and modern are many, but the connotation is one. The modern is always better as evaluated by

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the moderns. The ancient is out of date, *passe*, crude; the modern is slick, polished, efficient. Contrast the Crusades, for example, with modern warfare. What bunglers they were, those Crusaders! Armed with bows and lances! Bows and lances are out of date in warfare! But the obvious differences hide the more subtle and profound meanings.

Thus it would appear that all one has to do to gain merit for his cause is to proclaim its modernism. The crowd cheers, the doors are opened, the guests are invited to the feast. It is, therefore, with considerable humility that I venture upon this topic.

Modern physical education is the belief and practice of many people. One likes to be modern. There are large emotional drives wrapped up in a desire of this kind. It should not be treated cheaply. To determine its basic elements and the foundations of its structure are important.

In the first place, the worth of any practice or usage depends upon its service to the needs, ideas, and nature of the people of the time and place. In comparison with other efforts in other periods of time and by certain common standards, it may be superior or inferior but its supreme merit lies in the measure of fulfillment it gives to hopes, desires, and aspirations of human beings. The modern dress of young women in America is influenced by their interest in out-of-door sports and their need for physical freedom. This dress may be inferior to that of the ancient Greeks in matters of line, but no maid of Hellas, clothed in chiton, could compete with our modern Junos in modern activities. Whether the contrast is made between home industries of a by-gone age and modern factory methods, between pastoral life with its flocks and herds and modern industrial life with its noise and haste, or between the wireless and pony express, airplane and stage coach, photograph and daguerreotype, the excellence of each is relative to the ideas, needs, and nature of the time and of the place.

The drive among all people to build new structures, to organize and develop new plans and procedures arises out of the desire to secure practices that will meet more completely the needs of the people of the time and place. Their needs may be unreasonable, of little substantial quality, but they are their needs and as such represent the standard by which all serviceable things are measured. They are the scales of what is modern.

A modern physical education, then, is not something essentially slick and clever, better for all time than anything else, or the acme of the latest in human effort, but simply a physical education that is

responsive to the needs, ideas, traits, and characteristics of a people. The insistence upon this relationship between modern practice and modern need is supported everywhere in industry, in economics, in the world of material things. It is more difficult to establish its full force in social relationships, and yet, education today is everywhere undergoing changes that will secure a practice in harmony with present-day ideas, interests, and needs. This identity of practice with ideas makes it extremely unlikely that in physical education or in any similar cultural development the practice in one nation can be transported to another unless there is a common basis in ideas, interests, and needs. We in America need the restraining hand of the truth, due to our tendency to worship at the shrine of importations. The latest style from Paris may be adopted in headdress, but the latest style in Parisian, Danish, or Italian physical education may be quite out of date, inappropriate and not modern at all when brought to America.

What, then, are the ideas, nationalistic traits, and characteristics of the American people? They are not readily labelled and catalogued. In fact, many may disagree with any list compiled. If these I venture to suggest are at all acceptable, then the physical education that is responsive to them can be called truly modern, and that physical education that lacks correspondence is ancient, antiquated, and out of date.

1. We are essentially a pioneer people, highly individualized, with a strong competitive impulse.

Our physical education does its best work in rugged, daring activities. The safe and sane physical education of antiseptic exercises can never catch the imagination of a people that love adventure. Our athletic games present many crudities, as we might expect, and in comparison with English sport seem in many ways less admirable. And yet our games are one of the most modern and truest forms of physical activity which we have. The reforms to be advocated and the controls to be used should avoid sterilizing the activities. It is for this reason that play days seem such innocuous affairs.

2. We are a people that profess, believe in, and in part practice democratic ideals.

The election of Andrew Jackson sounded the doom of the systems of physical education in American which rest on mass drill and are so familiar in Europe. Belief in the maximum development of the individual means happiness as an ideal for every person to the limit of one's ability to make it a reality. Leisure then is not for any one class but is the birthright of every free man. The sports, the play,

and the dancing of kings and nobles have become the necessities of democracy for all its citizens. The mill town that offers calisthenics for the children of mill workers and tennis for the college sons of the town bankers is less and less possible as democracy squares practice with precept.

3. We are a people who have declared in an immortal document of freedom that all men have an inalienable right to "life, liberty, and the pursuit of happiness."

The old imperialistic game of ruling the other fellow, the stern necessities of perpetuating hereditary kingdoms must use education for military ends and purposes. The history of physical education reveals its alignment with military ideas, interests, and needs among various peoples. Are we in America ready to say that physical education shall denounce its military goals and shall set up everywhere a practice in conformity with the expressed interests, ideals, and needs of the American democracy? We must be alert to recognize the pretense of much of the military drill in public schools and the "boring from within" methods of the War Department. Is it anything more than pretense when they argue for military drill on the basis of physical development? For years this has been the substantial contribution of physical education.

4. We are becoming increasingly urban as a people.

The ratio of urban population to rural population is more than 6 to 4 now; it is increasing at every census. Our problems in living are different from those confronting rural nations and have centered around such pressure points as high-tension business, monotony in factory labor, sedentary tasks, and large increments of leisure time. Physically Americans are not heavy, rugged types but more and more exhibit the physical attributes that go to produce speed rather than endurance. Our international competitions have shown us for years at our best in speed events, whereas our performances in endurance contests have been only mediocre. Many authorities in orthopedics speak of the thin, long-waisted type, so typically American. It seems quite clear from such a statement of our national characteristics that we should not expect a procedure like Danish gymnastics to have more than passing influence. In terms of our needs as American people, the Danish gymnastics imported yesterday are not modern; one wonders in such a situation how they could ever have been called fundamental.

5. We are a people with an unusual jazz music.

Many will criticize us for this and vie with others in condemnation of our degeneration. Nevertheless, the fact remains that a

pulsing rhythm known as jazz brings a response from Americans that softens lines in faces and lets down the tension of modern urban life. I hold no brief for jazz as against one held for traditional and classical music. Nevertheless, it has a widespread effect in the lives of people as indicated by its use in song and dance. This may be an unworthy characteristic and one to be repressed and eradicated by education, but at all events it shows quite clearly why rhythmic activities have succeeded in physical education and why response-command activities have generally failed. It is reasonable, I believe, to say that in this sense rhythmic activities are modern; response-command activities are not.

6. We are a practical people.

In education, as in business, industry, and technical fields, the criterion of utility is often raised. For years education has been demanding effects that would function in the lives of people today. This has meant a reshaping of old curricula from the kindergarten to the professional school, with elimination or at least modification of many courses and content of instruction. If to be as good as our fathers means that we must be better, then the education of our fathers, venerated as that may be, is not a satisfactory process for the development of modern boys and girls in a rapidly changing world.

If it is granted that as a people we are intensely practical and view many things in education from the standpoint of utility, then that physical education is modern that serves the needs of individuals now. This criterion of functional utility alone, if applied would do much to rid our programs of innumerable games, stunts, and activities whose only excuse for existence is the plea of variety. It seems a reasonable and sound position to take that any activity justified on the basis of variety alone is unmodern, even antiquated, indeed, ancient. Certainly in these days with limited-time facilities for the teaching of essential and functional skills, attitudes, and responses, a teacher of physical education will have difficulty in defending certain types of relays, pointless games, and other non-functioning activities.

While due recognition is given to the view that utility is not and never can be the one standard of worth, and while appreciating that aesthetic and recreative values should not be ignored, it is nevertheless essential that all activities in physical education be examined with reference to their contribution to functional skills, powers, and attitudes in the lives of the people. Relative values must prevail as a guide in such determinations.

7. We are undergoing in common with other national groups a revolution with reference to tradition and authority.

The more obvious evidences of this revolt against authority are seen in religion. The conflict between those known as modernists and those known as fundamentalists is real, sharply drawn, and of educational import. The evidences are not so marked in education nor in any one aspect such as physical education. On the other hand, there should be a clear recognition that people of this generation have less respect for authority, rely less upon the sanctity of tradition than formerly and are beginning to ask for scientific facts upon which to base their hypotheses of what is best to do. To the extent that it is appreciated, then, that physical education will be recognized as modern that seeks to be scientific, that forsakes mere authority, and foregoes the easy virtue of traditional acceptance.

It should be remembered that we are still practicing many traditional procedures for which science has given sufficient light to direct our ways. Breathing exercises for chest development, oxygen storage, health, or respiratory adjustment is a traditional practice based on authority, bound by custom, and transmitted by uncritical and unscientific method. From physiology, biology, psychology, and even anthropology comes scientific evidence to convince us that we err. But custom is difficult to change. It is not easy to be a modern in the face of tradition.

The above presentation and analysis of seven traits, characteristics, needs, ideas, interests of the American people may be wrong. They are aspects of American life as I see it and understand it, however. If my analysis is incorrect, then make one for yourself. After you have set forth your description of what American people are like today, then the physical education which most nearly satisfies their needs will be a modern physical education. Let us forever renounce the view that the recent importation, the new and unusual practice, the slick and clever procedure have a claim to excellence because of propinquity. The mood of modern education is asking for a practice in relation to the needs of people and is based upon the traits of individuals and the social ideals and controls of a democracy.

Essentials of a Health Program for Secondary Schools

Frank P. Whitney[1]

It is to an all-inclusive ideal of health that we are being asked in these days to give allegiance. The man, the woman of health is the man, the woman who is in the largest and the finest sense hale,

[1] Principal, Collinwood High School, Cleveland.

sound, and whole. It is truly amazing how this ideal is capturing the imagination of the age. It is no wonder at that, without a single exception, every study of major objectives or of cardinal principles made in recent years puts health first. It is a new sense of the glory of the body as the vehicle of soul; it is the inescapable conviction that without health of this high sort there is no highest achievement; it is a renaissance of faith in the glorious trinity of life under new terms; it is one more evidence of the realistic determination of this determination "to see life truly and see it whole."

Faced with a challenge such as this, the modern school must levy upon every resource. If health as we are here conceiving it is to be a real aim of the school and not merely an idle dream, no department, no so-called subject is relieved from making its contribution to complete living. The first thing each school should undertake is to find out just what is being done by the various departments. The discovery of what others are doing will be an encouragement and a stimulus. It will inevitably result at once in increased attention to health all along the line. Plenty of opportunity for co-ordination will be revealed. Teachers will find their labors being re-enforced by others.

In asking each department or activity of the school for its specific contribution, it is well to emphasize the fact that educational outcomes consist in general of three sorts: appreciations, knowledges, and skills. In setting up any curriculum or program, we need clear statements of the specific objectives, of the experiences used, and of the means of measuring the achievement obtained. In setting up our health program, clearness and definiteness will be served by distinguishing as far as possible between these three major types of educational outcomes and between these three major steps in the educational process. The measure of their value lies in the degree to which they modify behavior in desirable ways.

Obviously the groups most concerned will be the teachers of hygiene, physical education, home economics, science, and social science. While every teacher should feel that he has a stake in the health program, the main reliance will be upon these five groups. The possibilities of re-enforcement of the health program by the teachers of natural science and of social science are very great and, in general, little appreciated.

Nothing would probably do more toward elevating health standards and reducing the almost incalculable waste due to preventable illness than establishing in the minds of young people a scientific attitude toward disease. For the most part, we still look upon the

various ills as heaven-sent afflictions coming from mystery and vanishing into mystery. The quacks and charlatans, the necromancers and the medicine men still flourish like the green bay tree upon the credulity of men. We pretend to teach science in our schools, but apparently without the slightest effect upon the great majority as far as changing the attitude toward the causes of such phenomena as bodily and mental ills. It is difficult to conceive of any teaching more certain to effect profound and lasting changes in health than that which is effective in actually developing genuinely scientific attitudes.

Having explored the curriculum in various fields for material supporting the program of general well-being which we have set before us, we find a surprising wealth of resources, perhaps hitherto unsuspected. The school must form habits, impart information, and develop a sense of obligation. It must aim at a health conscience. The whole program, if too wholly devoted to information, if over-intellectualized, will fall of its own weight. There must be generated some degree of emotional warmth. Without being sentimentalized, the attitudes developed must be emotionalized. In other words, genuine ideals of physical efficiency must prevail in the minds of teachers in such a state of effervescence that the sparks catch in the lives of pupils and set them aglow.

MEN

Probable Outcomes of Interscholacsit Athletics

Floyd A. Rowe [1]

The outcomes of interscholastic athletics to any school, to the participants, to the coaches themselves depend in a large measure upon the manner in which the executives of the school manage the contests rather than upon any uniquely intrinsic value in the contests themselves. Where, through the influence of local newspaper notoriety, certain members of the athletic team are allowed, in a measure, to assume control of the contests, the outcomes to the individuals and to the schools are either almost certain to be of little value, or even worse, of negative value. The probable outcomes depend in a high degree upon the care and effort which school authorities put into the management of the contests.

The place for school executives to begin exercising care and giving attention is in the selection of the person to whom they are

[1] Director of Physical Welfare, Cleveland.

going to entrust the program. Too great care cannot be exercised in this regard, and unless this selection of the coach is a proper one, the purposes of physical education will be defeated. To make a proper selection of a coach, several things are necessary. First, it is important to know the coach or coaches under whom an individual received his instruction since the influence of the coach is of such marked importance. Next in importance comes the fact that the training school from which one selects a coach should have taught decidedly and definitely that all competitive athletics are only a part of the educational program and that, unless educative values are included, the program must either be changed to include them or completely abandoned.

Leaders in physical education or competitive athletics do not have the right to claim for the competitive program any general benefit, so far as character-training values are concerned. In order to have the program of competitive athletics contain elements of proper character training, it becomes a positive necessity to be certain that the individuals in charge of the program have characters not only above reproach but of sufficiently positive natures to dominate, in a sense, the characters of those who enter into the competitive program under their direction.

The County Superintendent and Physical Education

Joseph W. Fichter[1]

The county superintendent who desires to develop an adequate program of physical education may find it necessary to bring to the attention of the teachers, boards of education, and the public the value of this phase of the curriculum. This requires courage in many cases, for in communities and counties where people are not acquainted with physical education there is frequently much opposition to it. However, we are assuming that the superintendent is a person of vision and courage who believes his task is to be a leader in the full sense of the word and not just an administrator of routine details. When new buildings are being planned in the county, he will use his influence to have sites purchased which will be large enough to provide ample space for outdoor games for all the pupils, and he will insist upon gymnasium facilities for each new school.

In the selection of teachers the superintendent can choose those trained to assume charge of physical education. Until recently

[1] Superintendent, Butler County public schools.

qualifications for offering instruction in physical education were not taken into consideration when selecting teachers for the smaller high schools, but today with the comparatively large number of applicants possessing such training the progressive superintendent will not be satisfied until he has placed in all the schools of the county a properly qualified man to handle the physical education work for the boys and a woman instructor to be responsible for this work among the girls. A faculty of well qualified teachers in each school is the responsibility of the county superintendent. His most effective supervision is done when he chooses the teachers, and unless he assumes this responsibility, his work as an educational leader is seriously hampered. A board of education usually grants a superintendent as much authority in the selection of teachers as it feels he expects.

There should be a course of study in physical education. If no course of study exists, the superintendent is the person to assume the initiative in organizing the teachers in the work of formulating one. With a course of study agreed upon and in the hands of all the teachers, the task of the superintendent is to assist the teachers wherever needed in using it and to see that it is observed.

Interscholastic athletics is a part of the physical-education program which is of great concern to the county superintendent. Usually there is a county committee that has charge of the athletics. The county superintendent should be an ex officio member of this committee. He will influence all the high schools of the county to become members of the State High School Athletic Association and see that all the rules of the Association are adhered to. He will insist upon having in his office a record showing that all pupils who participate in interscholastic athletics have been declared physically fit for such competition by a competent physician. He will insist on regulating all tournaments and leagues conducted in the county. His attitude toward physical education should be the same as his attitude toward any other subject in the school.

Preparation of High-School Coaches

G. E. Gauthier[1]

The preparation of high-school physical-education teachers and coaches for the State of Ohio is definitely outlined by the Department of Education. Since 1923 physical education has been a required subject in all elementary and secondary schools in the State.

[1] Professor of Physical Education, Ohio Wesleyan University.

This has placed physical education on a par with all other educational subjects in the school system. Many institutions have failed to consider the necessity of trained instructors in physical education and have used teachers who are untrained and unacquainted with its aims.

The preparation of physical-education teachers and coaches in colleges and universities is now done in the school of education or in conjunction with the department of education. Mr. Walter S. Monroe, Director of the Bureau of Educational Research of the University of Illinois, has gathered many interesting facts on the duties of men engaged as physical directors and athletic coaches in high schools. This study shows that half of the men devote full time to teaching physical-education classes and coaching athletic teams, and about an equal number teach non-athletic subjects. Most of the men handle three or four sports as well as classes in physical education, serve as coach of the teams, and give first aid to the student body, handle physical examinations for men, and look after general health conditions in the school. The opinion of the men in this field is that their job depends on personality or teaching ability.

Undergraduate work is done in three different types of institutions: schools of physical education, state normal schools, colleges or universities. Graduates of normal schools of physical education are often strong in teaching floor work and supervising playground but are weak in coaching athletics. Graduates of state normal schools have good classroom experience and are strong in discipline and cooperation with teachers and pupils but lack cultural and academic attainments. College graduates generally have ability to organize their work and a good knowledge of extra-curricular activities in major sports but are weak on practice teaching and graded work.

Besides having a strong character and pleasing personal qualities, knowledge and ability to teach athletic sports and give class instruction in physical-education subjects, teachers of physical education must be able to teach non-athletic subjects, and the sciences are the favored field of instruction. The instructor of physical education must be able to demonstrate the proper method of execution in all of the activities that he is teaching.

Undergraduate work in physical education can be divided into five separate groups: (1) the theory and practice of physical education and athletics; (2) the human body, structure, function, and growth; (3) abnormal conditions, detection, prevention, and treatment; (4) theory, principle, and practice of general education; (5) cultural and elective subjects.

The first and second years should be devoted to courses laying the ground work, academic subjects, and a basic knowledge of physical-education activity. The third and fourth years should be devoted to specialized study of theory and practice of physical education, athletics, student teaching, coaching, and administration. We have found that third- and fourth-year students more fully understand the theory and practice of athletic coaching.

One of the big problems is student teaching. We use our students in handling classes under supervision of instructors but feel that there is a great need of training schools in college where a program of supervised student teaching may be conducted with school children and demonstration of teaching methods may be given. Our students are required to learn and demonstrate exercises in gymnastic teaching and all athletic events and to take part in team play. In place of football and baseball the girls receive instruction in volley ball, swimming, folk dancing, educational dancing, tennis, basket ball, track and field, indoor baseball, archery, hockey, and playground games. Our students also supervise coaching in these various activities.

There is a growing opinion in favor of the five-year course of study in physical education with the fifth year devoted mainly to student teaching, a study of administration and organization, research work, and specialized course in sciences.

Personality and character should particularly be stressed. This can be done by special discussion of methods, personal conferences, by student leadership in activities, by giving students opportunity to organize and direct squads and classes, and the setting of high standards and ideals in the profession.

WOMEN

Corrective Work in the High School

Dorothy L. Zirbes[1]

The introduction of corrective work into the high-school program is becoming more and more general, and, although rapid progress will be impeded by lack of training, equipment, and time, a realization of the need of it is all that is necessary to get things started. What I have to say may not fit the need of every school. Perhaps some of you have worked out methods and programs that are especially well suited to your particular situation. However, what has

[1] Port Richmond High School, Staten Island, New York.

been done at Port Richmond High School may give a suggestion as to one method of procedure.

Corrective work should not begin in the high schools. The habits of poor posture start to form before the child leaves the primary grades. He is proud of his load of books; he spends an evening over his home work; he spends hours reading; and no thought is given to the way he sits, stands, or walks. Because he does not develop scoliosis over night, his parents see no change in his appearance. In school a posture test is given to the entire class by the classroom teacher, who can at best judge only superficially. Clothing, arrangement of hair, an exaggerated effort on the part of the child to stand well—all these cover up postural defects that could be discovered by a specially trained person who examines each child's back separately and prescribes corrective work. If this were done, the work of the high schools would be to carry on. We could devote almost all of our time to games, dances, and athletics, developing attitudes and skills, and maintaining physical tone through appropriate exercises.

These ideal conditions, however, seldom obtain. In most cities the responsibility of physical examination, of corrective and follow-up work falls on the high schools. In New York City the large new schools are equipped with examination rooms and corrective gymnasiums, and the work is done by the one or two members of the department who are especially trained. In the smaller and older schools it is left to the chairman of the department to include or omit corrective work in her program. Personally, I can think of no situation where time could not be given nor a place improvised for the examination, in order that extreme cases can be discovered and referred to expert medical care.

Port Richmond High School, which is a relatively small school for New York, now registers about 525 girls. They are programmed for physical training five periods a week, one of which is a hygiene-instruction period.

On the first hygiene day of the term, each class gathered in an informal manner on the gym floor. The girls were given a short talk on the importance of good posture and were told of the common defects. There was also an explanation of how impossible it is to know just what the condition of the spine is without actually seeing it and tracing down the line of vertebrae to find out whether it is straight or not. When their curiosity concerning their own condition was sufficiently aroused, the girls were told that their backs were going to be examined and that each one might know how her own back looked. The ground was thus paved by getting them to see

the importance of an examination; that, in turn, prevented an antagonistic attitude on the part of the parents.

Examinations began the following Monday in the shower room between a folding screen and a mirror. The pupil stood so that her profile could be seen in the mirror by the examiner. First, the back was examined, then the habitual standing position was noted, and the results were recorded on the examination card. When there was indication of scoliosis, the girl was asked to rest with her weight first on one foot and then on the other. When one side felt more comfortable than the other and the shoulders became uneven, the girl was questioned as to the way she carried her books. In some

TABLE I

Book Loads Carried by High-School Girls

Weights of brief cases and book loads	Grades				
	I	II	III	IV	Total
3 pounds	.....	.....	.....	.....	.....
4 pounds	1	.....	.....	1	2
5 pounds	4	2	4	5	15
6 pounds	6	3	2	3	14
7 pounds	6	3	4	.....	13
8 pounds	14	11	4	2	31
9 pounds	13	9	7	2	31
10 pounds	20	26	17	3	76
11 pounds	24	14	18	1	57
12 pounds	18	14	10	4	46
13 pounds	8	7	9	1	25
14 pounds	5	6	5	2	18
15 pounds	.....	2	2	.....	4

cases it was difficult to find a habit which was responsible for a girl's poor posture. Most cases of scoliosis, however, could be attributed directly to the carrying of heavy loads of books either in brief cases or on the hip as we shall see later. Other common causes, such as stooping over home work, sitting on one foot, poor nutrition, lack of tone, etc., were found repeatedly.

After we had discovered the cause, and the effect of it was impressed upon the girl, the examiner tried to have her take the very best posture that her musculature would allow. First, the examiner gave the cues that were needed, such as, "waist flat, chin in, shoulders down, chest up." Then the girl relaxed and gave herself the cues, correcting her own position while she watched the lines of her profile change in the mirror. This was done three or four times or until she seemed to get the feeling of how she should stand. By the time each examination was finished, the girl had forgotten to be

shy, and we were much better acquainted because of the informal, friendly spirit in which we talked things over. We had a mutual interest—the girl's appearance. The examinations are now accepted by both girls and parents as a part of our routine. Entering classes are examined each term, and every girl is reexamined once each year. Let us go back to the first examination which was made in September, 1927. Three hundred seventy-five girls were examined, the results expressed in percentages follow:

	Percentage of Cases
A and B posture defects	5
Slight remedial defects	7
Antero-posterior defects	56
Scoliosis	32
Both antero-posterior defects and scoliosis	15
Number of structural cases referred to specialist	1

It was the surprisingly large number of scoliosis cases which were found to be the direct result of carrying books that made a comparative study of the weight of brief cases an interesting investigation. Each girl's brief case or book load was weighed, and the results are listed in Table I.

Here are a few suggestions which were made by the teachers of Port Richmond High School at a conference where this problem was considered and discussed:

1. Give each child a complete set of books to take home and to leave at home and let the subject teacher have enough books in her recitation room to distribute at the beginning and to collect at the end of each period.
2. Abolish study periods as such and lengthen each period to one hour, the first half to be spent in instruction and recitation and the second, in directed study of the same subject. Books would be left in school, with little or no homework assigned.
3. Have occasional inspection of brief cases to avoid carrying around unnecessary material.
4. Give instruction in the right way to carry books and brief cases to avoid their dragging one shoulder down and pushing one hip up.
5. Guard against the one-side habit.
6. Do not allow unsymmetrical sitting positions in the classroom (sitting on one foot).
7. Design a bookbag to be worn like a knapsack.

A few of these are being carried out this term.

One of the cases which was referred to a doctor was an extremely interesting one. Dorothy Smyth showed a very marked ptosis, a

peculiar position of the pelvis, scoliosis, and bad kyphosis. It was quite evident that mere exercise could never bring about a lasting correction. She was sent to her family physician, who did the wise thing and sent her to an orthopedic hospital for examination by a specialist. She was photographed, put on the operation waiting list, and told to come back in three months. After that time had elapsed, the degree of curvature had become so much greater, that she was told to report the following week, ready to stay for five or six months. A spine-fusion operation was performed, and she was put in a cast for five months.

One month after the cast was removed, Dorothy complained of pain in the region of the incision. X-ray photos showed that the fusion had broken and that another operation would be necessary. This was most disheartening, but the child bravely faced six months more of the torture which the wearing of a cast must necessarily cause. It is now about four months since the second operation, and Dorothy comes to school every day. During her gymnasium period she goes off to one corner and works hard at the exercises prescribed by Miss Schrampf, who is in charge of corrective work at the orthopedic hospital. In two or three months when the cast is removed, Dorothy's muscles will have good tone and she will be able to run and bend and will be as active as her classmates.

Let us turn our attention now to the large percentage of students having postural defects. It was evident that more specialized work had to be done. This demanded a rather radical departure from the usual plan of lesson. In most New York schools it is the general practice to divide the lesson time, which is approximately thirty minutes, into two parts. The first half is spent on tactics, static and rhythmic correctives, and a formal drill of a few exercises using some of the Danish work and some of the old type of hygienic exercises. The second is devoted to dancing, games, and squad activities. These natural motor activities could not be forfeited, but it was felt that the first fifteen minutes could be used to better advantage. The following is the first of the series of lessons planned and put into daily use. The purpose of each is mentioned first.

1. General—Warming up exercise; jumping-jack exercise.
2. Breathing—Rhythmic breathing with walking—inhaling for 4 steps and exhaling for 4 steps. This should be done to music if possible.
3. Relaxing—Arm pendulum.
4. Flexibility—Kneeling, head on floor, hands clasped behind; back, head, and arm lifting.
5. Abdominal control—Hook lying, slow knee dropping to right and left.

6. Lordosis—Heel raising, slow deep knee bending and slow extending.
7. Poise—Balance walking.
8. Posture training—Standing flat against wall and trying to make entire spine touch wall.

In connection with this posture work a series of hygiene talks was planned in which the purpose of each exercise was made clear. With the use of a skeleton, a mannikin, or little cardboard figures it is quite easy to show the normal posture and the common faults of posture. It is left to the class to decide where the muscles are that have to be stretched or strengthened to correct each fault.

To carry on this intensive corrective program, there does not seem to be a more practical nor a more adaptable plan than the one Miss Lillian C. Drew outlines in her book on group correctives. Progressive lessons are given for every type of postural or structural defect that it is within our boundary to attempt to correct. She warns against trying to treat scoliosis of the structural type unless each case can receive individual attention. Her rule, that the size of the group in corrective work should be in inverse ratio to the severity of the condition, is no doubt a wise one. Work in small groups to correct similar defects approaches the ideal.

Unless either of these two plans can be used and unless we are especially trained, we should not attempt to prescribe corrective work without medical advice. By co-operating with the orthopedic specialist in the nearest hospital, we can help him carry out his corrective program for structural cases which we refer to him, as in the case of Dorothy Smyth, but the responsibility is his. Our responsibility lies most heavily with the 80 percent who will benefit by symmetrical development: strengthening of the lumbar spine, increasing the flexibility in the dorsal region, stretching the pectorals, and strengthening the abdominal wall. The exercises listed in the lessons mentioned are safe, self-testing, and difficult enough to be interesting.

To sum up, then, corrective physical education in the high schools is not only the prescribing of exercises but it includes the following steps:

1. To examine each child's back thoroughly.
2. To have the pupils know why we examine their backs.
3. To be sure each child knows what the strong points and the weak points in her posture are.
4. To find the habit or the condition responsible for each child's defects.
5. To find the best orthopedic clinic and to get the doctors' confidence and co-operation.
6. To refer structural cases to the clinic and follow their progress.

7. To give symmetrical exercises with specific local effect for the correction of postural defects, either to the entire class, to groups, or to individuals.
8. To seek the co-operation of the classroom teachers and of the principal in lightening book loads and in the observation and correction of poor classroom habits of sitting and standing.
9. To inform parents of the posture condition of their children but to warn against nagging as a curative measure.
10. Since a characteristic of adolescence is emulation, we should try to be examples of good posture.
11. To gain the confidence of the girls through evincing sincere interest in them.

Finally, in terms of the keynote of this conference, not as a single step but as a continuous aspect of the work, we must evaluate our corrective program by means of periodic checks, looking for the effects of our teaching in increased interest, improved posture, better physical tone, and all round development.

Prerequisites and Preliminary Training

Margaret Bell[1]

There is very little doubt that the trend in physical education is changing and that with this general change in trend the training of teachers in this field must be considered. I am referring especially to the training of women. There are three types of schools that train workers in this field, namely, the private schools—such as Sargent, New Haven Normal, and Central School—the state normal schools, and the colleges.

Up to very recently, I have liked to think of the private schools, especially, and the normal schools as well, on account of their shorter courses and their shortage of satisfactory laboratory equipment, as training largely for the activity techniques, while the colleges with their extensive laboratory equipment are laying proportionately more stress on the scientific basis of the work and on the research on which the progress of the profession depends. This was a nice working division, for young technicians came from their schools well prepared in general educational principles, and capable of leading in their various positions. But alas, two new obstacles arose.

First, comes the fact that the elementary school is gradually coming to require a bachelor's degree of all its teachers that the junior

[1] University of Michigan.

and senior high school will appoint only teachers holding a master's degree, while college positions require a doctor's degree. Even now a large number of normal schools—all the normal schools of the state of Michigan, for instance—are offering four-year courses.

The next disturbing factor is the question of health education. I do not like the tendency to separate the health educator from the physical educator. In other words, as far as the education of women in this field is concerned, I like to think of the logical progress of the individual as something like this: There is no teacher in the school system who is in a more advantageous position than the physical educator. It is a well-known fact that the influence of a beloved leader in this field takes precedence over all else. Therefore, character and personality that make for good leadership are indispensable in this profession if good citizenship and the development of good leadership are to be the goals of all education.

Good physical condition is another essential for entrance into this profession, good physical condition and a knowledge of how to maintain it, with an ambition to increase its potentiality. Personal health and efficiency involve certain subjective and objective factors. The subjective factors, as quoted from Dr. Wood, are (a) enjoyment and zest in work and play, (b) the feeling of being rested and refreshed in morning and not more than wholesomely tired at bedtime, (c) general attitude of cheerfulness and confidence in relation to life and freedom from persistent worry and anxiety, (d) good appetite and relish for food, (e) freedom from regularly recurring or persisting physical pain and discomfort, (f) ability to work with comfort and satisfaction eight hours a day, five and a half or six days in the week (forty-four to forty-eight hours a week).

Average mental ability with a capacity for concentration, coupled with a natural intellectual curiosity, is indicated. The prospective student can judge her own academic ability by her high-school grades. She can prognosticate her college academic success somewhat by her interests and even more by her previous achievement as shown by her grades. While the required course is not difficult, it does require that tenacity of purpose that comes with faith in one's chosen profession. For simplicity's sake, the recommended standard for entrance is a high-school academic average in the 80's, or a B average—an A being units to 100, and C being 70 to 80.

Good physical co-ordination is necessary to one who intends to undertake the work of an athletic coach—a teacher of rhythms—or as a leader in activities of any kind. It is desirable, too, that each applicant shall be familiar with as many team games as possible—

basket ball, baseball, hockey—and with the individual sports—tennis, golf, swimming, and archery. A sense of rhythm is essential.

The next big requirement will be the survey of the place of activity in all its phases—exercise as a health habit, as a factor in growth and development, as a recreational factor, and as one of the great devices in the development of citizenship. This program would necessitate a passing acquaintance with certain subjects and a more intimate knowledge of others. During the same period, time must be given for the development of adequate skills—performance is essential to satisfactory leadership.

I would like to digress for a moment to stress one point—women have a tendency to belittle the importance of skillful performance. Skill and physical achievement are the most potent factors that we possess for the motivation of any of the objectives named above. For example, we are all agreed that a certain amount of exercise is to be indulged in throughout life to insure maximum organic capacity. We realize, too, that none of us are likely to carry over any interest which is apt to include us in the inexpert group, whether it is bridge, poetry, or golf, and yet, in the case of the majority of college women who have been exposed to physical education in the grades and the high school, I see too many students with so little skill in any field that there is no joy or satisfaction in physical performance, but rather a diffidence in participating in activity on account of their inadequacy. The responsibility for this neglect must fall upon the elementary and high school, for at college age the student is usually too old to feel that instinctive joy in self-testing and that achievement is the most conspicuous and most gratifying instinct of an earlier age.

To come back, then, to the training of the physical educator in normal schools: the normal school must provide sufficient opportunity for directed training in all phases of activity. The college, university, and specialized schools, such as the recreational and playground schools, must superimpose their programs of specialization, preferably on such a program as the foregoing. The lost motion and the confusion as it exists in our field today must be clarified, or we will lose the faith of the administrators who are now at a loss to know where to find the type of trained individual that they have in mind for specific duties.

NOTE: The following demonstrations were given at the close of the Men's Session: "Adaptation of Track Skills to Classes in Physical Education," by Guy Kessler, Central High School, Columbus; "The Use of Stunts in Physical-Education Classes," by L. G. Staley, Ohio State University; and "The Use of Basketball Skills in Physical-Education Classes," by H. C. Olsen, Ohio State University.

Religious Education

The New Demands of Religious Education

F. A. Shults[1]

Religious education is not a new thing, and yet it is one of the newest and livest movements in view on the educational horizon. It would be easy to think back and find the origins of religious education in the earliest recorded history. It is not the purpose of this paper, however, to discuss the ancestry of the present movement but to point out and describe briefly the new demands of religious education.

It is a new emphasis and a new determination that the old ideal shall be realized. We have always said that religious education should be included in any scheme of general education; that it is a vital factor in character building; that every child in the nation and in the whole world should be given an opportunity to know God and to understand His will for humanity, but we have never before seriously undertaken to do the thing that we have envisioned. Now religious education proposes a complete, well-rounded education in the realms of the physical, the mental, the social, and the spiritual. Religious educators are building a system of education that will reach every child and youth, offering opportunities on week days as well as on Sundays, during vacation time as well as during the school year, with well trained teachers who are paid for full-time work as well as with a multitude of scarcely less-trained volunteer teachers.

This new emphasis on the necessity of completing this educational task will involve a multiplication of the present number of trained leaders and teachers of religion and a hundred-fold increase in expenditure for religious education. The other half of the educational arch must be completed; and our youth shall come to maturity with a sympathetic understanding of what religion really is and with an intelligent understanding of Christianity as the way of living.

It is a new method of procedure, a new approach to the pupil. It cannot be denied that the approach to the pupil in the past has been materially centered. The teaching has been aimed at the pupil, and the applications have been directed toward him; but the teaching began and continued with the use of a text. We have been teaching the Bible.

[1] Ohio State Council of Religious Education.

The material-centered approach is not wrong. There is much to say for it, and it will doubtless continue to be used with profit to children as it was used in teaching us. The point is that the pupil-centered approach must also be mastered and used, and there is no doubt that its use will greatly stimulate the discovery of religious truth by the young and that it will encourage youth to venture out into the experience of Christian living. We know a great deal about the Bible and Christian history, because we have been studying those things. Some day we shall see complete Christian living in every relationship of life, because we shall be studying the spiritual needs of living boys and girls, and we shall be satisfying those needs with group discussions, with projects, and with the practice of Christian habits. The old method will not be altogether displaced, but the new method must also be emphasized and its techniques learned. Creative work on the part of children must be recognized and incorporated into the lesson plans of teachers.

The new program of religious education includes extended and more closely graded Sunday-school instruction. It includes also instruction in the week-day schools of religion on time released from the public schools and in the vacation church schools. This will not only reach practically all children in any given community but it will triple or quadruple the amount of time now usually given to religious education in the Sunday schools. This program includes also a change in the conception of curriculum whereby there is a recognition of the unity of a child's experience. There shall be no extra-curricular activities. All the experiences of childlife are educative, and religious education is concerned with them all.

A thorough-going program in training for leadership is already projected. Religious education as we conceive it can be accomplished only by trained administrators and teachers. When Christian churches discriminate among teachers of religion and when parents insist on a high grade of religious instruction for their children, then trained teachers will be provided.

Principles of Modern Religious Education

Forrest L. Knapp[1]

In discussing the principles of modern religious education it seems necessary to begin by naming some of the things which religious education is not. This is necessary because the older conceptions of re-

[1] International Council of Religious Education, Chicago.

ligious education have become so firmly fixed in our thinking that it is difficult for us to recognize the meaning of new terms and new forms.

In the first place, religious education is not education in a catechism. This is not to say that catechisms have never made any contribution to the religious education of children and young people, but it does say that experience has taught us that a method more inclusive of human needs and interests and more in harmony with the psychology of human nature is needed. There is evidence to believe that this method is being found.

Again, religious education is not just an attempt to bring such influences to bear upon the growing child that there will result an emotional upheaval commonly known as conversion. The experience of conversion has played a vital part in the lives of many folk and has not infrequently resulted in finer living, but as a universal objective of religious education it is no longer tenable. Conversion—a "turning around"—may sometimes be necessary but by no means always. The statement of Horace Bushnell, a great Christian prophet of the last century, is universally true: "A child may grow up a Christian and never know himself to have been otherwise."

Religious education does not seek primarily to produce intellectual assent to a creed. Of course, whether he considers himself religious or not, everyone believes something with respect to the basic questions of human life. A man lives a belief whether he states one or not. Apostles of modern religious education would say that there are some things more worthy of belief than others and that the truly religious person is far from being completely agnostic, but they do not set out to produce in each person the willingness to ascribe to a given formula of religious faith.

Religious education is not simply and exclusively an attempt to impart a knowledge of the content of the Bible. As soon as we say that, we are, of course, branded as disrespecters of the greatest Book of the ages, but, nevertheless, the statement must be made. Knowledge of the Bible in and of itself does not produce the desired results. Only as we modify some of our deeply rooted ideas can we go forward to a truer conception of religious education and to a more profitable and more truly educational use of the Bible.

In connection with our mention of the Bible, attention may well be called to the fact that religious education is not concerned exclusively with individual salvation for some future paradise. All of us have had contact, perhaps unhappy contact, with the ticket-to-heaven kind of religion, the kind of religion which selfishly centers

attention upon the prizes of the future to the neglect of the present. Religious educators today are vitally interested in the future, but they are giving content to that interest by being vitally interested in the present; and included in this concern for the present is a concern not only for the individual but for society. Individual and social salvation are indissolubly bound up together. These are some of the things which modern religious education is not and does not do. Now we must ask what it is and what it does try to do.

Modern religious education is interested in the whole child. It has not been, and is not now, uncommon to discover the assumption that religious education is concerned with the soul while public education is concerned with the other aspects of the human life. But, just as there is a strong insistence, at least in certain quarters, that religion must permeate all that a person is and does, so there is a realization on the part of an increasing number of folk that the program of religious education must have reference not merely to one aspect of an individual's life but to his whole self. It is being insisted that nothing less than the whole child attends the school of religion, on Sunday morning or at any other time, and religious education must affect the whole child. Religious educators may not undertake to feed the child, but they recognize that, if he is not fed, their program will be limited, if not completely nullified, in its effectiveness. It is hard for a hungry man to pray—at least for anything but bread. Modern religious education is concerned with an integrated, not a divided, personality. It may be emphasized, moreover, that religious education is interested not only in the whole child part of the time, or in part of his experiences all of the time, but it is interested in all of the child all of the time. Whatever influences share in shaping his life must be taken into account by the religious-educational program as it attempts to guide his development.

Another basic principle of modern religious education is that all of the laws which apply to any learning process whatever apply equally to education in religion. If it has been established that when the conduct of the history class is accompanied by satisfaction and pleasure, there will be a greater residuum in the experience of the learner; it is equally true that religious education is more effective when it takes place under satisfying circumstances. Likewise, if the law of mind-set or readiness determines the starting point for the lesson in botany, it also determines the starting point for training in worship. The psychology of the learner is the same in both cases.

It may be said here that what we are thinking of as the modern program of religious education is not the result of some sudden revo-

lution or the message of an unheralded revelation. It has grown as all education grows. Its roots go back into the past. It makes no pretense at being entirely new, but there are enough new aspects in the thinking of a large number of our leaders to justify us in speaking of principles of modern religious education.

A discussion of the principles of education cannot in any sense be complete or satisfying unless it includes a consideration of objectives. Principles of education are, in fact, largely determined by objectives. Therefore, we must attempt to answer the question, what are the objectives of religious education?

In a comprehensive sense, the objective of religious education is to guide the learner into increasingly more abundant living. A person is living an abundant life in the extent to which his capacities and abilities of doing and his powers of appreciating are developed and to the extent to which they are employed for fruitful and worthwhile activity. Such terms as "release of personality" and "growth of personality" are not infrequently heard among religious educators.

There are certain factors which are essential to the more abundant life. Good health is one. Poor health limits life, even though some invalids attain marvelous beauty and nobility of character. One's economic status is another factor, because we must all make a living. Although there are many things which gold cannot buy, there are some things which only gold can buy. To be required constantly to live a hand-to-mouth existence is to be seriously handicapped in the progressive attainment of the abundant life. On the other hand, if one's interests are completely absorbed in the prizes of economic success, many capacities for appreciation and constructive living will be dwarfed, and an abundant life is hardly possible.

Another factor which may and generally does vitally affect the abundance of one's living is his family life. Though all of the world's riches be added unto his estate, the existence of unhappy family relationships can do naught else but prevent complete expansion of his powers. Though few of this world's goods be possessed, a happy home can fill the place of much else which life may lack. And so it is with one's social relationships and one's use of leisure time; they, too, must be governed and controlled if life is to be full and complete. There is no phase of human living which is not a determining factor in the extent to which life will be abundant. The objective of religious education is so to guide the learner's participation in and relation to all of these activities and aspects that the abundant life will be progressively achieved. And, in doing this, religious education depends upon religion, in the final analysis, to provide the controlling

motive and to give meaning to the whole. Religion must permeate all of one's interests and activities and must underlie one's whole working philosophy of life if life is to be full and complete.

According to the best thinking of our day, a man must possess a certain minimum of the essentials of life in terms of physical comforts and social relationships, but his life consists not simply and exclusively in the number and extent of these possessions. True religion does not separate a man from the earthly life by transporting him into realms beyond. It rather leads him into an experience of reality which transforms the earthly life and makes it divine.

The conceptions heretofore stated vitally affect the curriculum of religious education. The curriculum is very commonly thought of as a body of recorded and systematized knowledge which is bound between the covers of a book, or of several books. The writer of a course for the school of religion selects a subject and then proceeds to gather informational materials and to organize them into units, presumably of the proper length and difficulty to be administered in successive doses to the passive recipients who are members of the age-group for whom the course is intended. The teacher of the course in turn assumes the task of binding the seldom entirely passive pupils with the bonds of a certain brand of discipline while the doses of information are administered. The doses having been administered, the teacher uses some device or other in an attempt to persuade the learners to give back exactly what they were given. To the extent to which their replies are perfect are their lessons learned.

There is, however, a conception of curriculum which is much wider than this and which has been for some time rapidly gaining in favor. Religious educators are maintaining that the curriculum is not simply a body of recorded and systematized information. Information per se is of great value; but it alone does not, and cannot, produce the result desired—an abundant life. A knowledge of facts offers no assurance at all of issuing in complete living. Something more than facts is required if a larger and richer experience is to be the outgrowth.

Perhaps no two people among those who are leading in the field of religious education would exactly agree upon any one definition or description of the curriculum, but there are certain fundamental respects in which they do agree. The curriculum of religious education, it may be said, consists of all the factors which affect and enter into the experience of the growing person as he participates in activities selected under the guidance of the leader because of their educative value in achieving the desired objective which is abundant living.

This statement regarding the curriculum of religious education needs to be clarified, but before doing so, we must get before us the answer to another fundamental question, namely, what is the function of a leader or teacher in the educative process? Just as the conception of the fundamental principles of religious education and of the curriculum of religious education have grown, so has the conception of the function of the leader been modified and enlarged.

An individual learns best when he participates in an activity. It is an old axiom that experience is the best teacher. Rightly understood, experience is the only teacher. Human beings never learn except when they participate in an activity—that activity need not be physical either in whole or in part. A learning experience may involve merely the imaginative participation in the past or present activity of some one else. Still it is for the learner an activity.

Moreover, it has not only been discovered that the learning process is most efficient when there is participation in activity, but it is also known that the participation should be purposeful. When a learner enters wholeheartedly into an activity with a purpose which is his own, either in origin or by adoption, the educative process is most effective. The business of the leader is so to guide the learner into wholehearted, purposeful participation in selected activities that greater enrichment and more intelligent self-control will result. The task of the leader is not fulfilled when information has been imparted or when passive assent to formal statements of virtues has been obtained. These facts are familiar to all, and they apply with the same force to religious education as to any other kind or phase of education. The leader in the program of religious education has achieved success only when such factors as he had introduced into the experience of the learner result in more complete living in the light of the highest conception of the abundant life. The function of the leader is not primarily to impart knowledge but to lead the learner toward life enrichment and self-control through the guidance of educational activities.

Having before us this conception of the function of the leader, we may now attempt to illustrate the meaning of curriculum and its use by the leader. Let us imagine that Mr. Jones has become the leader of a group of boys, nine, ten, and eleven years of age. He is responsible, during the period of a year, for the religious education of these boys. How shall he go about his task? In the first place, Mr. Jones discovers that he is, in the final analysis, responsible for the selection and use of the curriculum. As a result of study and research, certain ultimate objectives for the religious education of the young

have been set up for his guidance, together with more specific objectives for the age-group to which his boys belong. Furthermore, he is provided with a wealth of definite suggestions as to the sort of activities which have been discovered by research to be generally effective in leading boys of this age toward the objectives. With the suggested activities there are lists of sources of informational materials regarding the past experience of the race and of individuals and groups in activities which are similar in important respects to the experience which it is deemed desirable for the boys in his group to have. These are the organized factors which Mr. Jones may introduce into his curriculum. But there will have to be selection even from these factors, and, moreover, it may become necessary to ferret out other materials and initiate other activities before the year is over. The general direction of the course may be predicted at the beginning, but by no means its exact pathway. In addition to these sources, Mr. Jones will add to the curriculum from his own experience and from the experience of the parents and other associates of the boys. He will also call into use the past experiences of the boys themselves. And last, but not least, he will utilize the most pressing problems and the latest activities of the members of the group.

With the realization that during the year he may and will use all of these factors in the curriculum for the religious education of his boys, he is ready directly to assume his responsibilities. Where shall he begin? Perhaps somewhat as follows. The boys in the group, together with some others, meet rather regularly on a large vacant lot on Saturday mornings to play. Mr. Jones selects this as an opportunity to enter naturally into their life. Following this selection, Mr. Jones stops at the vacant lot on a certain Saturday morning and before long has become one with the members of the group in their games. This activity, selected by Mr. Jones as having value for the achievement of the objective, becomes the first element in the curriculum of religious education for the year. This event occurs on Saturday. On the following day Mr. Jones is introduced to the boys as the new leader of their class. As a result of his experience of the preceding day he is extended an informal but a genuine welcome. And when that welcome is over, it is Mr. Jones's "next move."

It should here be recalled that the immediate objective of the leader is to lead the boys into an experience of wholehearted, purposeful participation in such activities as bear promise of resulting in greater enrichment and intelligent self-control and thus in more abundant living in the light of the religious ideal. It may be said further that Mr. Jones realizes, because he is a trained and experi-

enced leader, that on the basis of race experience as recorded in the Bible and elsewhere there are certain desirable activities in which it will be well for the boys to engage but that participation in them will be unsuccessful if it is forced. On the other hand, he realizes that it is wise to take as his point of departure the interests and problems of the boys, but that to allow the choice of those activities to depend entirely upon the chance caprice of the immediate interests of the boys is to make altogether uncertain any reasonable advance toward the objective. Here is the crux of the whole situation in respect to the activities which are to be used. Mr. Jones must find a way so to stimulate those existing interests which point in the direction of the desirable activities that the boys will, for a purpose which is their own whether or not it is that of the instructor, enter wholeheartedly into the desirable activities. The purpose of the boys may only in part be the purpose of the leader. The boys may during the year engage in only a few of the activities which were originally suggested to the instructor, and they may engage in many others. And, furthermore, those activities must grow out of and continue to be the real life situations of the boys.

Some of the activities in which the boys engage may involve a study of the life of some character in the Bible or, perhaps, some character of American history. There may be participation in the dramatization of a Bible story or in planning and leading services of worship for the group. There may be a trip, even on Sunday at the Sunday-school hour, to the museum for the purpose of discovering as nearly first-hand as possible some facts relative to the origin and development of life. The boys may organize a club for play and service activities. Each of these elements is a part of the curriculum, and throughout there will be tactful, wise guidance by Mr. Jones and a constant attempt to lead the boys into those experiences which give greatest promise of resulting in more abundant living, according to the religious ideal, through enrichment and intelligent self-control.

In the light of these statements the question may well be raised, what is it which the agencies of religious education can do which cannot be done by the public schools? Is not their objective also the progressive achievement of more abundant living? Have they not set an interpretation of "self, nature, society, and God?"[2]

These questions are wisely asked, but we need not search long for the answer. There is no doubt that the public schools are interested

[2] National Education Association. "The Development of the High-School Curriculum," *Sixth Yearbook, Department of Superintendence*. Washington, D. C.: National Education Association, 1928. p. 51.

in abundant living. There is no doubt that they do make a contribution to the interpretation of self, nature, society, and God. But the fact remains that traditionally they have not pretended to do and are not now doing all that the agencies of religious education ought to do, and must do, if the objective of religious education—abundant living in the light of the religious ideal—is to be achieved. Those teachers in the public schools who are genuinely religious are undoubtedly, through the character of their personal lives and in other ways, making a very valuable contribution to their pupils. But with our present traditions and policies with respect to religious liberty, the public-school program cannot but stop short of the goal. There must be specific religious education. Sometime in the future all education may become religious, but it is not so now.

Just what, then, is the unique contribution which religious education is trying to make to growing persons? This may be briefly answered. Religious education is trying to give motive and meaning to the whole of life. It is trying to provide the motive which results from a realization of the highest values in life as embodied in the most complete conception of God. For Christians these values are represented in the life of Jesus Christ, and religious education is trying to give that meaning to life which results from a personal knowledge and experience of the divine purpose of righteousness and love.

The greatest question which human beings have to answer is this: What is the meaning of life? And it is an eternal verity that each must discover it for himself, and then that discovery will never be final but always progressive. This becomes more clear as we consider the significance of the term, "the meaning of life." Any factor in our lives has meaning for us only as we can relate it to some other and more familiar experience. In my home there is a swinging door between the kitchen and the dining room. That door has meaning to me because I understand why it is there. It swings both ways in order that it may be easily opened from either side. It has more meaning when I understand how it was made and that the wood of which it is constructed was sawed from a tree. And then it gains still more meaning when I recall that the tree grows because its roots extend into the ground to draw nourishment from the earth and that the leaves, through the process of photosynthesis, perform the act of breathing. Thus, the door in my house has meaning because of its relation to something else.

So it is with ourselves. My life has meaning to me only as I can relate it back to a larger fact, a more comprehensive principle. I relate it to God as creator and sustainer. But the mere statement that

I so relate it to my mental conception of God is not enough. Relating the door to the tree would have little meaning unless I had ideas about the tree. And relating my life to the life of God results in meaning only to the extent to which I have experienced God. Interpretation without experience is far from sufficient.

In certain quarters it is being suggested that the program of character education of the public schools can and will logically supplant the program of religious education of the church. The proponents of modern religious education would, I am sure, be among the first to hail with joy the day when all of the educational programs now being provided for American children may be fused into one program. But that day is not yet here. Although the schools of the state and the schools of the church stand together upon certain very fundamental principles with respect to the psychology of the learner and the great objectives to be achieved, there is yet one factor which the program of character education of the schools of the state is not doing and which must, therefore, be done by the schools of the church.

The program of religious education must lead the child into an experience of contact with God through worship, this experience resulting in the permeation of all of his interests, activities, and motives with a vital quality which can come in no other way. There must be definite training in worship, and the modern program of religious education tries to provide this training in as close relation as possible to the whole of life. This is the unique contribution of religious education—so to guide the lives of growing persons that they shall have an increasingly abundant experience of relationship to God's purpose of righteousness and love.

Fundamental Aims of Religious Education

Rabbi Stephen S. Wise[1]

The use of the term, "religious education," is in itself sweepingly radical, for it involves the admission that religion is not always, nor even for the most part an experience to be conveyed. And it implies further that religion is not to be conveyed or to be imparted by the method of the authoritarian, that is, through mere authoritativeness. When you attempt to educate a man religiously, there is the underlying assumption that he has the right, if he will, to refuse that religious education. In other words, you do not in the spirit of

[1] New York City.

authoritativeness enforce a point of view in religious education. On the other hand, you actually teach that there is freedom of choice, of acceptance, and co-existent with that freedom is the freedom of rejection.

Too often we assume that the modern teacher of religion is working under the same conditions as those under which Isaiah and Paul—those great figures of the two Testaments, Hebrew and Greek—worked, taught, and shared their religion. But the fact that we must face, whether it be pleasant or unpleasant, is that religion is not what it was in the day of Isaiah, or of Paul, or of St. Francis, or Benedict Spinoza. The religion of Isaiah and Paul and Assisi and Spinoza was, after all, a mood not a mode of life or an attitude toward life, but a mood touching the creative and sustaining spirit of the universe. Let me use a familiar term, a term we all know; the old religionists for the most part were mystics.

Now, what is a mystic? You can offer a definition that will be just as valid as mine. May not the mystic be defined as the man who has an immediate sense of the presence of God, a man to whom the fact of God is the one important fact of life? It is not merely that the mystic sees God but that he sees nothing else. The mystic not only hears God, but he is deaf to every other voice. The mystic not only feels God and follows after God and embraces and is embraced by God, but every other relationship of life becomes secondary, unessential, and even trivial.

I am not holding up mysticism for praise only, because mysticism has led to some of the most lamentable aspects of religion. Whatever you today may think of certain monastic orders of the great Christian churches of the world, they are a different thing today from what they were in the fifth, sixth, eighth, tenth, and twelfth centuries. Mysticism pure and undefiled leads not so much to what I call "a spiritual conception of the universe" but to a shutting out from the horizon of life of all that is not God. Mysticism is a sense of contact between human me and God, the infinite and divine, which so shuts out and belittles and minimizes every other contact as to make God the supreme factor in life.

I address to you a question, and I am not dogmatizing, "excathedraizing"; I am not even sure I am right; I am merely a minister of religion who believes he is right. Does not the fundamental problem of religious education grow out of the truth that we are trying to educate young people in what we no longer accept as a valid, complete, and sufficient interpretation of the content of religion?

Sometimes I cannot help but smile when I go into some of the classrooms of my own religious school, directed by some fine associates of mine, when I come upon young people in these classrooms. The night before the teachers may have read some chapters of the Bible and some chapters of the great history of the Jewish people and may even have glanced over the headings of the lesson of the day again coming down in the subway. What can they bring to young people of a mystic conception of religion when, for the most part, these teachers just barely know about rather than are able to share, to impart, to communicate the mystic ideal. Occasionally, and alas only occasionally, even in a religious school, one comes upon a mystic soul, man or woman, who sees God and knows God and touches God and lives God. Then, of course, this mystic spirit gives something that is rare and inevitable, the conveying of the one supreme experience of life. Do you get it more often than occasionally? If any superintendent here has five or six or ten such teachers among thirty, let me violate the commandment, "Thou shalt not covet."

We have been trying to teach religion, the religion of Isaiah, of Hosea, of Jesus, and Paul, and St. Francis through the instrumentality of persons to whom, for the most part, mysticism is just a word, to whom mysticism is not interchangeable with religion. For this reason an enormous measure of religious education has failed and failed tragically and is bound increasingly to fail until we face this second fundamental fact which may give us hope, namely, that you and I believe—but not because of mysticism and its rare gleaming, divinely bestowed moments—that religion means and is a spiritual interpretation of the facts of the universe. That is what religion means to me. For me religion is an outreaching of the spirit unto the divine above and into the human around about me. In other words, religion for me has reference to a spiritual outlook upon or conception of the universe, which involves two things, my acceptance of the spiritual sovereignty of the universe, the spiritual truth which overlays all, and such an embracing of the life of the world as moves me to order aright as far as I can my relations to other human beings, who, when my relations to them are right, cease to be other human beings and become fellow-men and brothers.

For those who are trying to teach religion there are two tremendous contradictions. On the one hand, there is the contradiction between the mystic conception at which we hint and touching which we give only faint and timid adumbrations because that mystic mood is not our own for the most part. And in the next place, there is further contradiction between our interpretation of religion as a sense

of outreaching from man to man and our adherence to the law of life as we assume it to obtain to the contradiction between the matter of the jungle in which we live and the manners of the Kingdom of Heaven about which we speak. I do not mean to say that in a religious school you can resolve that contradiction and make your children believe that this jungle mood of men is just a seeming thing to be ignored and that these manners of the Kingdom of Heaven are real and abiding things. You cannot teach religion to young people, whether they be ten or twenty, unless you observe an unflinching integrity of soul. You must face the difficulties of the problem with the same simplicity of heart and the same straightness of mind with which these things are faced by the young people. Do you think that young children, even children as young as eight and ten and twelve, do not see the abysmal gulf between the precepts of religion as they are taught and the practice of religion and the practices of life as they look upon these from day to day?

There are three possible methods. One is to lie about it by direction or indirection and say or imply that there is no contradiction. The second method is frankly to say that prophets and apostles were wrong and ultimately the law of the jungle is to prevail. The third method is the hardest method of all because it requires faith and courage and wisdom and insight; it is frankly to tell the young people whom you teach that we are barely out of the jungle and that all these things we see about us are the survivals of a way of life which is in utter contradiction to religion as we see it and understand it and would attain it. You will then get something for which teachers may be infinitely grateful; those whom you teach will believe that you are honest in facing difficulties.

Suppose a child in a religious class of mine were to ask me today, "Dr. Wise, will you explain to me—isn't there a commandment in the Decalogue, 'Thou shalt not covet'?"

"Yes."

"Well, last night I heard my father say to my mother, 'I wish I hadn't sold those three hundred shares of American—let us call it—Balloon or Ashcan yesterday, because if I hadn't sold them, I would have been $3,000 richer tonight since these shares are worth ten points more than they were yesterday when I sold them, and somebody else has made the money that I would have made if I had held them.'"

What are you going to say? Or, is it only Jewish children who ask those questions, who have occasion to hear such things, and are these wicked money matters excluded from every Christian home?

What are you going to do? I know what I would say; I know what I would do. I would explain what stock speculation is. It is a species of gambling, although people do not always realize that. I would explain what gambling is. I would explain what covetousness is, and I would also explain that some day when we have a real civilization and life does not consist in my overreaching other folks, these things will be put aside like instruments of torture and weapons of war. I would not for one moment desist from holding up the standard. In other words, I would not for one moment lower the standards of religion as an ideal because a lad's father violates those standards in practice.

One thing we must make clear to children is that we have not yet reached the point where we are equal to the demands and the professions of religion, although we are getting better and better and growing nearer and nearer to the attainment of those standards, even if with occasional awful lapses to lower depths.

If I were to be asked at this moment what are the fundamental objectives of religion, I think I could define them rather simply—to move young people or children Godward and manward at one and the same time. I had rather make my children feel the sin and the shame of contradiction between the divine mercy, on the one hand, and the attitude of ruthlessness or even indifference of men to one another, on the other hand, than to bring them, if I could, the mystic's religion. This, for my part, I feel and I bring it to you as the summation of my own religious teachings, and, of course, my religious teaching is rooted in my Jewish past and derives from my Jewish background. I cannot separate myself from forty centuries of spiritual history and spiritual experience. In the teaching of religion you need to be at your best and highest. If you can do it always, I envy you, but I do not believe you can. Be fairly and decently loyal to a spiritual conception of the universe. I do not believe there are many of us who have the divine joy of the mystic consciousness uniformly. St. Francis had it; Elijah had it; and a Judaeo-Galilean mystic nineteen centuries ago among my people had it. The rest of us humbler folk must be satisfied with an occasional and rare gleam growing out of our hunger and quest.

I try to make young people whom I teach, whether they are ten or twenty or twenty-five, understand and feel and live one truth which I think sums up the fundamental aims and objectives of religious education—the soul of man may reach upward because there is a soul which underlies and overlays the universe. The soul of man must reach not only upward to God, but outward to his fellow-

men, and the human outreaching of man is after all the truest test of the reality of divine outreaching of the soul that we humans know or of which we are capable. That, in the fewest words, is my summary of what I conceive to be the fundamental aims of religious education. Yet, I am willing to depart from these fundamental aims. There is the necessity of pointing out to young people, in addition, that these things that divide you, Protestant, from me, Jew, and you, Catholic, have nothing to do with religion. They only concern the organizations which at their best enshrine religion and at their worst smother and defile it. I try to make my young people understand that after all religion is a thing of the spirit—not organization, power, or wealth. These are only outward things and have no fundamental relation to religion, which is a spirit, a spirit communicating with the Divine Spirit, and communing with the human spirits of fellow-men.

I would sum it up thus: We cannot all be mystic teachers because ours is not a mystical experience. When we try to be teachers of the mystic way of life, we teach neither mysticism nor the elements of religion, except for those rare souls among us to whom the mystic vision is vouchsafed. Instead of that, ours can be the teaching of a spiritual outlook upon and conception of the universe against which is pitted every mechanical outlook and viewpoint and attitude. We can teach a spiritual conception of the universe and, if we do that, we can and we must teach that the bond that links man to man is spiritual equally with the bond that links man to God.

Would it seem very strange to you if I, a Jewish teacher, were to say that it is necessary to fortify yourself by reminding you that long, long ago someone was asked, "Which is the greatest of the commandments?" He answered, he spoke, "Thou shalt love the Lord thy God with all thy heart, with all thy might, with all thy soul," and he added, "with all thy mind." And when he was asked which was the second greatest command, he said in the Hebrew which was the only language he knew, "Thou shalt love thy neighbor as thy self." Thus he conveyed the fundamentals of religion—love of God and love of and service for man. And he was right.

Some Practicable Economies in School Administration

G. E. Roudebush[1]

Economies in school administration will fall, perhaps, into two groups, one planned for emergency purposes and the other arranged for a continuous, constructive program. The first group is usually for the purpose of balancing the budget. It has as its end nothing more or less than saving a certain sum of money within a certain specified time.

About October 1, 1928, the Columbus schools were notified that the shortage in tax collections would reduce the anticipated funds for school purposes in 1928 about $159,000. A study revealed the fact that, if no further obligations were incurred during the remainder of the year than those already controlled by contract and law, the year could probably be closed without a deficit.

Many things were done during this emergency. Some of them are enumerated as follows without regard to their order of importance. The use of electricity, coal, gas, and water was limited as far as possible. Maintenance work, except for emergencies, was delayed until after December 31. The purchase of supplies was limited to immediate needs only. Co-operative work with outside agencies was restricted to programs without expense to the Board of Education. The use of buildings at night by the schools and the parent-teacher associations was reduced. The number of regular employees was restricted to the present force, and substitute employees were added only in emergency. Small classes were often combined with others. Bond money for approved expenditures was used whenever legal.

These suggestions were put into effect as diligently as possible, but the actual program of instruction was affected as little as possible. Some of the things done were not economies, but merely delays of certain expenditures. In general this group of expenditures has little to commend it except that it causes an organization to initiate procedures some of which produce valuable returns in normal times.

The second type of economy, termed practicable and constructive, should be a continuous program. This calls for more extended studies, more far-reaching policies, and continual vigilance. For

[1] Assistant Superintendent of Schools, Columbus.

convenience of discussion let us examine the usual annual appropriation measure. In Columbus, if we exclude the item of debt service, over which we have little immediate control, we find 86 percent of the remainder of the appropriations are allotted to personal service, but 14 percent allotted to supplies, materials for maintenance and the like. If we are to produce economies of real significance, we must study the large items of the appropriation measure. Of the 86 percent the largest share is, of course, expended for instruction. Careful organization of school units will produce large returns in this item. An increase of one pupil per teacher in Columbus will reduce instruction costs $100,000 annually, two pupils $200,000. An approved uniform teaching load, rigidly adhered to, will materially reduce the number of employees in this department of instruction. Improvement of learning conditions will reduce failures and the cost of re-education. Elimination of all high-school classes with enrollments of less than fifteen would reduce costs another $60,000.

Another large item of the personal-service costs is the salaries of janitors, engineers, and other employees of the operating department. Through the application of a uniform method of determining the cost of operating all the school buildings, a reduction of the number of employees was effected with an increase in salary to the individual employee and a net reduction in cost for the whole department.

Lack of economical use of such items of current expense as supplies, materials, and equipment will be better understood by unit-cost accounting. Purchasing in large quantities to justify competitive bidding and discounts will produce worth-while returns.

A last topic has to do with the construction of new buildings and a maximum use of all buildings. Because of the ever increasing variety of offerings in the curriculum and because of the continuous community demands, school buildings have become expensive. A minimum of non-instructional as well as instructional space not usable at all times will reduce waste. Equipping for multiple service, flexibility, and elasticity of design should be fundamental principles.

The organization of each school program so that a maximal use is made of the building is important. By reducing the length of class period by five minutes in Columbus junior high schools, thereby making it possible to add one period to the school day, and also by requiring all high-school teachers to teach five periods with 30 pupils instead of six with 25 pupils, something over 50 classrooms were added to the available space with no additional cost. Well-organized schools have shown 80 to 85 percent efficiency when figured on a weekly pupil-period basis. Requiring school programs to come up to

some approved standard before requests for additional space are allowed, will materially reduce expenditures for construction of new units as well as the cost of their maintenance and operation.

An Analysis of Increased School Costs

R. S. Wenzlau[1]

The tremendous increase in school expenditures within the last quarter of a century has produced a great amount of criticism which school authorities cannot allow to remain unchallenged. A careful consideration of the factors contributing to this increase indicates that the present situation is more apparent than real and that present-day costs can be and are fully justified. The factors which have produced this increase and which must be investigated are: increased enrollment, decreased purchasing power of the dollar, and increased wealth of the community or ability to support education.

This analysis is based upon statistics of the Toledo Board of Education and considers operating costs only. Capital outlay for new buildings, equipment, and the purchase of sites is eliminated, as well as interest and sinking-fund charges on the bonded debt.

In order to make a comparison of enrollment on a cost basis, it is necessary to reduce the high-school enrollment to the basis of elementary enrollment. The ratio of yearly per pupil cost in the high school to that of the elementary school has remained practically constant during this period and is fifty percent greater in high school than that of the elementary student. Therefore, it is necessary to add fifty percent of the high-school enrollment to the total enrollment in order to get an adjusted enrollment on an elementary basis for comparison.

The ratio of cost due to increased enrollment is obtained from this adjusted attendance total and for 1927 is 2.25 times that of 1900. This factor is designated as E in Table I.

Much of the increased cost is due to the depreciated value of the dollar. The indexes of cost of living and purchasing power of the dollar prepared by the United States Department of Labor indicate that the purchasing power of the dollar with 1913 as the base year was $1.29 in 1900, $1.07 in 1910, $.48 in 1920, and $.57 in 1927. From these statistics it is apparent that the purchasing power of the dollar in 1900 was 1.20 times that of the dollar in 1910, 2.69 times that in 1920, and 2.26 times that in 1927. This second factor will be designated as D.

[1] Director of Schools, Toledo.

The third factor entering into this analysis is that of increased wealth or ability to support education. Increased costs due to added school activities or facilities are only warranted by the ability of the community to bear these increased costs, and unless there has been

TABLE I

Analysis of Enrollment Figures, Toledo

	Elementary-School Enrollment	High-School Enrollment	Total Enrollment	Total Enrollment Adjusted to Elementary-School Basis	Ratio of Adjusted Attendance (E)
(1)	(2)	(3)	(4)	(5)	(6)
1900	17,956	973	18,929	19.416	1.0
1910	20,085	1,769	22,854	22,739	1.17
1920	28,224	3,389	31,613	33,308	1.71
1927	33,489	6,906	40,395	43,853	2.25

TABLE II

Analysis of School Costs, Toledo

	Value of Tax Duplicate	Wealth per Pupil			School Costs—Operating and Maintenance	
		Actual	Basis of 1900 Dollar	Ratio on Basis of 1900 Dollar[a] (W)	Actual	Increase in Operating Costs over 1900
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1900	$ 51,780,406.00	$ 2,660.00	2,660.00	1.00	$ 400,631.82	....
1910	83,511,180.00	3,680.00	3,060.00	1.15	781,351.00	1.95
1920	467,149,130.00	14,000.00	5,200.00	1.95	3,435,652.80	8.55
1927	585,730,230.00	13,400.00	5,950.00	2.24	4,595,929.00	11.45

[a] United States Government statistics.

a proportionate increase in wealth, these added burdens cannot be justified.

Probably the best index of the ability of a community to support education is the amount of taxable wealth per school child. This increase in taxable wealth is further substantiated by the totals of individual bank deposits in the banks of the city for the period under consideration. The taxable wealth per pupil in Toledo increased from $2,660 in 1900 to $13,400 in 1927. When corrected to allow for the depreciation of the dollar, however, these figures

become $2,660 for 1900 and $5,950 for 1927, indicating that the taxable wealth per pupil in 1927 was 2.24 times that per pupil in 1900. This factor is designated as *W* in Table II.

Actual school operating costs at Toledo have increased from $400,631.00 in 1900 to $4,595,929.00 in 1927, which gives a ratio of operating cost for 1927 of 11.45 times that of 1900. The ratio of increase due to enrollment *(E)* multiplied by that of depreciation of the dollar *(D)* and taxable wealth or ability to pay *(W)* gives an index of the justified cost. These ratios for 1910 when multiplied together given an index of justified cost of 1.62; those for 1920, 8.95; and those for 1927, 11.4. Since the actual increase in operating costs in 1927 over those in 1900 were 11.45 (see Column 7, Table II) the index of justified cost 11.4 indicates that school operating costs are relatively no higher today than in 1900 when the correct valuation is given to the factors responsible for this increase.

The Rochester Plan of Administering School Supplies

J. S. Mullan[1]

The slogan of today is standardization and efficiency, two words which are familiar to our ears. We at Rochester have attempted to secure both. My personal interpretation, however, as to the meaning of the word "standardize" in connection with the administration of my office is that it applies to quality and quantity. What I mean is this: as we are custodians of the taxpayers' money and are responsible to the taxpayers for its expenditure, each taxpayer has a perfect right, if he is interested in any item or items which are being purchased by the Board of Education, to present his case to the Board and to receive due consideration. This leads me to believe that we have no right to standardize on any particular name or make and to purchase no other kind. On the other hand, due to state law, it is necessary to determine before we advertise our standards of quality. The state law compels us to accept the bid of the lowest responsible bidder meeting specifications. Thus, if we did not specify quality, we should have to accept the low bid, which might not meet requirements.

Standardization is necessary for economy and efficiency. You can readily see that fewer items will be required under standardization although the amount of each item is necessarily increased. Quantity of any one item, rather than assortment of items, is the basis on which selling concerns figure. In the preparations of our specifications,

[1] Secretary, Board of Education, Rochester, N. Y.

then, it is necessary for us to go into each item in detail in order that we may be protected and also that the bidder may be given all possible data so that in the preparation of his bid he will know exactly what is required.

Another result of standardization is that supplies for similar use are made uniform in all of the schools. This permits us to purchase in large quantities at a better figure. We do not permit one teacher to requisition a penmanship pad or other material of a particular make and another teacher in a parallel grade in another school to requisition materials of another make. When we reach our final decision after considering all conditions and purchase an entire year's needs, these supplies are passed out to all of the schools using such materials.

We may not use the same make as a standard of quality in each year's specifications. We might this year, as far as quality is concerned decide to use the Dixon's pencil (No. 400) in the first grade, since throughout the previous year it has given entire satisfaction. We should then continue to use this pencil as our standard and so specify. Upon receipt of our bids, however, we find that Eagle No. 401 submitted as a substitute for Dixon No. 400 is, in our judgment, equal to the Dixon No. 400 and the price is less, we shall so award the contract. If throughout the year 1929 Eagle No. 401 proved satisfactory, we shall use it as our standard of quality in our specifications for 1930. I trust I have made myself clear that the word standardization with us means nothing except quality and quantity.

In our specifications we permit a bidder the privilege of bidding either as "per Board's sample" or by furnishing substitutes, in which event his bid must read "substitute" and be accompanied by his own sample marked "Bid for Substitute, Item No. —" giving the number of the item for which his bid is substituted. When a bidder submits his bid and does not submit samples, it is understood and agreed that he is bidding on and intends to furnish the article as designated by name in our specifications. The matter of choosing our standards is gone into carefully.

SELECTING SUPPLIES AND EQUIPMENT

Specifications.—It is our custom to make all purchases as far as possible on a competitive basis. We, therefore, prepare specifications to meet our requirements and, of course, to comply with our state law. Before preparing such specifications we make a general survey of all materials then in use in the schools in order to ascertain if they have given entire satisfaction throughout the year. This invites

criticisms and suggestions from supervisors, principals, teachers, and janitors. We find that by using this method of procedure we keep the materials abreast of the educational progress of our schools. After our specifications have been completed we endeavor to interest the largest possible number of competitive bidders. We keep as best we can an up-to-date file containing the names of various manufacturers and vendors who might be interested in our requirements, and a copy of the specifications is mailed to each one. We usually send out two hundred copies each year. Our specifications are arranged so that the vendor may bid on a single item or on a number of items, knowing that he may receive a contract for one or a number of items, provided that his bid is satisfactory. In the wording of our specification, we reserve the right so to award the contract, and by doing so the Board in each case profits by the acceptance of the lowest bid which meets specifications. Our specifications are made up in book form. Each sheet has a duplicate copy which is perforated and is intended to be removed by the vendor and retained with his records.

Tabulation of bids and choosing samples.—We arranged to give bidders at least three weeks from the date of advertising in which to prepare and submit their bids. Bids are opened by the purchasing agent either at a meeting of the Board on the date set for the receiving of bids or at a subsequent meeting. A committee is requested to sit in with the purchasing agent to go over the samples before reaching a conclusion. The personnel of this committee is made up of those who are either directly or indirectly responsible for the use of the material and whose judgment should be given deep consideration. We also take into consideration in making our choice the use to which the material is to be put. If, for example, the material is destroyed after the lesson is over, the cheapest material that will stand the test is purchased. If the lesson requires the retention of the material for any length of time, a better quality is provided.

In every case we consider the low bid first. If such bid meets the requirements of our specifications, there is no question. If the bidder submits a substitute and there is a question in the mind of the purchasing agent as to its meeting specifications, it is referred to the committee as outlined above. In this way, where committees are requested to sit in and counsel, we avoid criticism which might arise later in case the judgment of the purchasing agent proved to be in error when the goods are delivered to the schools. In all cases where committees are requested to sit in and counsel, before any sample is

submitted for consideration all trade-marks, names, and labels which indicate the manufacturer or the person offering the sample for competition are erased or detached from such sample so that the opinion of those on the committee may be based upon the merits of the article without any knowledge as to who offered the sample in question. The purchasing agent marks the sample with a key number, and the committee in making its recommendation refers only to the key number. Its choice is registered as first, second, third, etc. Should its first choice be the highest priced material, the purchasing agent calls attention to this fact. If the difference, in the committee's judgment, warrants the expense, the first choice is so recommended. If, on the other hand, in its judgment, the second, third, or fourth choice might meet our requirements and there is a considerable saving by so accepting the bid, the committee may reconsider and recommend the purchase of a cheaper article. The opinion of these committees is usually accepted, but in some cases where, in the judgment of the purchasing agent, they have erred, he takes the matter up with the superintendent and assistant superintendents before making a final decision.

HANDLING SUPPLIES AND EQUIPMENT

I will now attempt to explain how our present system of handling supplies came about. The system under which we operated a few years ago permitted the principals to make their requisitions on a monthly basis covering material such as they deemed necessary for all departments in their school buildings. We found under this system, in taking our inventory after the closing of the second semester in June, that a large amount of material accumulated in the school. In some cases we found enough of certain material to run the school for a year, a fact which indicated that the principal instead of taking inventory of the stock each month before making out his requisition apparently ordered what in his judgment would be needed regardless of the amounts on hand. It was necessary for us on account of the surplus to return several truck loads of material to our storehouse, which, of course, was very expensive and led us to believe that something was wrong either with the system or the principal in making out his requisitions. We gave the principal the benefit of the doubt and set out to revise our system.

A committee consisting of four principals of different types of schools was requested to sit in with the purchasing agent, chief clerk, and stockkeeper. We then made a careful study of the situation from every angle. Many meetings were held covering a period of

several months before we arrived at a conclusion. The final outcome of these meetings, however, was a decision at least to try out ordering supplies on a per-pupil per-item basis. The problem then arose as to what we should use as common denominator. We considered the needs of a first-grade pupil and estimated the number of sheets of writing paper this pupil would need, together with other supplies on a like basis to cover a year's consumption. This same basis was later worked out for all grades, although a revision of the amount in some cases was necessary.

Requisition blanks.—Our next problem was the preparation of the necessary forms which would be in keeping with our new system. A number of revisions were necessary before we secured a workable requisition blank, etc. The blanks accepted and now in use are made in quadruplicate on different colored paper. On the blank is printed a list of all the items used in each grade. Separate blanks are provided for first, second, third, fourth, etc., grades. A column is provided for the teacher to enter the number of pupils in her grade. Another column is provided in which to enter the amount of each article on hand and still another column with the heading "Do not use." This means that there may be an article listed which the teacher may not use in her particular grade. In this case she places in this column a cross.

As intimated, each teacher makes out her own requisition except in the case of office and library supplies for which requisitions are made out by the principal. The principal and teacher in each case retain one copy of the requisition, sending the other three copies to the office of the purchasing agent for his approval. After being approved, they are passed on by the chief clerk whose duty it is to see that the proper amounts for each item are inserted. Requisitions are filled in as follows: Consider a teacher of Grade I-A who has thirty-five pupils. Each one of the thirty-five pupils is entitled to a certain amount of each of the various items covering the period of time as outlined on each blank. The clerk in the purchasing department in determining the amounts of each item simply multiplies the number, thirty-five, by the amount to be allowed, then deducts whatever amount may be on hand in the grade room, and the difference is placed in the column under heading "amount to be delivered." You will note that the requisition gives only the number of pupils in the grade and does not ask for a certain number of pencils, etc.

The principal and heads of departments are furnished with a book of instructions which contains also a copy of each blank and gives further instructions as to the particular form to be used and

the way the various blanks are to be made out. Every teacher has access to this book, and if she gives it careful study, requisitions will be properly filled out.

Our blanks are so arranged that each covers a particular department of items. In other words, only related items may be placed upon any one blank; for example, furniture is separate from tools, books, etc. This is not only helpful to the bookkeeper in coding and charging the accounts but it is also helpful in being error proof as each teacher recognizes the same item by its number. Again, to assist the requisitioner, the items in our storehouse bear a number. These numbers are arranged in series. For instance our printed forms might run from Numbers 1 to 200, hardware carrying Numbers 500 to 700. These numbers are kept in book form.

In order to keep an accurate check on the amount of material used in a year's time, we provide in this book four columns. The first column is used for our inventory stock taken at the end of the fiscal year or just before preparing our specifications for the coming year. The second column contains the actual purchases throughout the year. The third column contains the inventory taken at the end of the following year and is similar to Column I, except at the end of the next year. The fourth column contains the actual consumption during a one-year period. In this way, we have a complete record of each item and know exactly what our consumption has been. Through this record we can arrive at an accurate estimate of our needs for the next year, since it is only necessary to add to these various amounts sufficient to cover any anticipated increase in registration. We find this preparation a safeguard and time-saver.

Delivery.—After the requisition forms have been properly filled out in the purchasing agent's department, they are passed on to our storehouse, where the goods are packed in cartons and other boxes and labeled for each individual school—Miss Jones, School No. 46, Room 205. The goods are packed and marked as requisitioned. Each package bears a number. These numbers are entered in a book. A requisition might consist of ten different packages. Delivery of all storehouse packages are made by our own trucks. When the chauffeur arrives in the morning, he finds all the packages for his daily trips entered in a book. He verifies the count for the number of packages for each school and for which we get his receipt. We require him to secure a receipt from the principal, or from some person delegated by the principal, for the number of packages he had delivered to that school. We do not, however, require a receipt at this time for the contents of the packages, as it would be

impossible for the chauffeur to remain long enough to have the contents checked. The principal delegates either the janitor or some person in his building to see that the packages are delivered to the respective rooms as numbered. The teacher upon opening the packages finds the fourth copy of her requisition containing a list of the contents in detail. She checks this list and if any discrepancies are found, the matter is immediately taken up with the storehouse. Otherwise, she sends her receipt in full.

Under our present system we make four deliveries each year except in case of emergency orders. In each case a ten-weeks period is covered. Our teachers have the highest commendation for this system. They inform us that they can lay out their work better, knowing exactly the amount of material they have on hand for a given time, than if it were necessary to requisition from time to time through the principal of their school from a school-supply room.

JANITORS' SUPPLIES

We encountered a greater problem in arriving at a satisfactory conclusion concerning the amount of materials necessary for janitors properly to take care of their buildings than we did on our standardization of educational supplies. It was apparent that a revision was necessary in their case as well as in that of principals and teachers. I called into counsel our supervising janitor and storekeeper. We made a general study of the situation and were led to believe that a larger amount of supplies was being used by the janitors than was necessary to take care of their buildings. In order to prove our case, we chose a school having a janitor whom we believed would follow out our instructions and give us an honest opinion. Then, we took, for example, a cleaning powder which cost perhaps one and one-half times more than some others we were using. The janitor making the tryout had no knowledge of what material he was using. We asked him to use it as he had been using other powders and keep reducing the quantity until he arrived at a point where he was securing the necessary results. This he did and upon securing his report, we found that a very excessive amount of powder had been used and that reduction could be made without interfering with good housekeeping.

We then had a problem on our hands to convince other janitors that such was the case. We called a general meeting of the janitors and put the case before them. Their comments in many cases were that it was impossible to get the results with the amount of material specified. We requested them to give it a trial. They co-operated in our request and later reported to us that we were correct in

arriving at the amounts, stating that the work could be properly done. We then standardized the quantities for all supplies used by the janitorial force. This system has been working advantageously and it is needless to say at a considerable saving in the cost of janitors' supplies. In the selection of our janitorial supplies and materials each year when bids are received, we call in a group of janitors and counsel with them before arriving at a conclusion in awarding contracts.

CHECKING STOCK IN STOREHOUSE

A word as to how the stock is being kept in check in the storehouse. There is a permanent record card for each item in stock. If it should be necessary for me to ascertain the stock condition of any item in the storehouse, the storekeeper could furnish such information immediately. Of course, an inventory is taken from time to time as a check up, and a general inventory, say once a year, is reported to the main office. The stockkeeper is required to keep a check on all items so that his stock will not be depleted to the danger point. We agreed upon a certain minimum amount of stock to be kept on hand at all times. When the material reaches this level the stockkeeper immediately notifies the purchasing agent, and an order is placed to replenish the stock.

There are still a few instances where we have difficulty in applying our per-pupil standard, for example, in the industrial and science departments. In these fields are many different problems that require different materials and that are at variance with each other. We are working on this problem and hope to master it soon. Of course, it is not practical and advisable to carry all laboratory supplies in stock on account of their combustible nature.

We are so equipped that we can, through our print shop and shop schools, take care of at least 90 percent of our own printing at a considerable saving. We also make in our shop schools a large amount of furniture which we use in the schools at a great saving to the Board.

PURCHASE ORDERS

Some materials cannot be carried in the central storehouse to good advantage, and for these purchase orders must be issued. Special blanks are prepared in quintuple on different colored paper. One copy is sent to the vendor. Three copies are retained by the purchasing department, one of which is priced and passed on to our financial department to give the daily expenditure and to enable that department to control the budget limitation. The fourth copy

of the order is sent to the school from which the requisition has been received, informing the principal that it has been honored and with whom the order has been placed. He retains this copy. As soon as delivery has been made by the vendor the principal receipts this sheet and sends it to the purchasing department. If one or more items have not been received, he checks off the items received and sends it in just the same. In such cases, the extra copy retained in the purchasing agent's office is mailed to the principal, giving the unfilled item or items. The principal holds this copy until the shipment is completed. This method prevents delay in paying the vendor's bills until complete delivery has been made.

In case the delivery is not made within a reasonable length of time, the principal reports the fact to the purchasing department. It is not the purchasing agent's job to pass judgment on articles thus ordered the same as on regular stock. Material purchased by this route is usually needed because of a change in policy, and the only person who can pass intelligent judgment upon the requisition is the one familiar with the situation. Our superintendent of schools has designated the two assistant superintendents to pass judgment on requisitions for special purchases. After their approval is affixed, I, as purchasing agent, use my best judgment in making the purchases. Whether the requisition bears the notation of a market or not, I feel that as purchasing agent, if at all qualified, I should be better able to choose a vendor than those having no experience in that field. All persons empowered to write requisitions in our system thoroughly understand that they are not to bargain with agents. Negotiations leading to purchases must be made through the purchasing department.

SECURING PRICES

We exercise the same care in securing prices on purchases of this kind as we do on our specifications for regular stock. In other words, we choose as our standard a certain make, as to quality only, and secure estimates from at least two or three reliable vendors. There are times when competition may be impossible, for example, on the purchase of a typewriter of a certain make. Nevertheless, we deem it good policy to ask for prices without letting the vendor know that there can be no competition. Items amounting to $10.00 or under are purchased without competition from a reliable dealer. While our state law permits us to purchase in open market to the extent of $1,000 without advertising, we do not abuse this privilege by purchasing from one who might be termed a "favorite" vendor.

We have a regular inquiry blank which we send to several vendors stating our needs and requesting their estimate and from whose bids we choose the best value before placing orders.

CONFIRMATION ORDERS

We do not permit a supervisor, principal, teacher, or janitor to place an order for any material other than through the purchasing department. Before adopting this rule, we were embarrassed by receiving bills for material for which no formal order had been placed. Upon tracing it through, we often found that John Doe had called by telephone stating that he needed the material at once and so it was delivered. You can readily see that it was impossible for us to keep an accurate account of our outstanding indebtedness. We have notified the vendors with whom we deal that under no consideration must they accept orders other than from the purchasing department, further stating that if they do the person placing the order must be held responsible for its payment.

There are times when emergency orders must be cared for over the telephone. For instance, a typewriter gives out and needs immediate attention. In such cases the principal calls the purchasing department, stating the facts. He is furnished with an order number and given the privilege of calling the repair man. An order is immediately sent to the firm designated. The principal calls the repair man giving him the order number and states that an order will be forthcoming from the purchasing department. The principal then sends in a written requisition covering the telephone message, on which requisition he places the order number he has received from the purchasing department. In this way we have a complete record of the transaction.

Our system of handling equipment is along the same line as that for supplies. We prepare specifications in detail, and often blue prints, giving the bidders the information they require to enable them to make an intelligent bid. We may choose as a standard for quality a certain make of chair and ask for bids for furnishing either that particular make or its equal. In no case do we advertise for supplies or equipment of a certain name and no other.

Do not understand me as assuming that we have the only successful system, but I am frank to say that we are very much pleased with its results. It is the best system we have ever adopted. We covet criticisms and suggestions. A perfect system is yet to be evolved.

Note.—Address before the joint meeting with City Superintendents are given on pages 114-32.

School Librarians

What the College May Reasonably Expect from the High-School Library

Earl N. Manchester[1]

The relations between the high school and the college and university have presented and still afford ground for many debatable and divergent views, especially when such a topic as the one assigned is presented in its present form. "Expectations" like "good intentions" are subject to misconception and to long-deferred realization. We have passed through a period when the college regarded the high school as existing primarily to prepare students to enter college, and in consequence of this assumption, the college practically dictated the curriculum of the high school in spite of much acrimonious protest and discussion of "mine and thine."

We now realize that a vast majority of high-school students never reach college; hence the methods and purposes of high-school education should be adapted to the majority of high-school students and not to the minority, considering the fact that these high schools are directly or indirectly supported by public taxation. As a result of this change in point of view colleges, whether state supported or privately endowed, have gradually, and perhaps reluctantly in some cases, revised their entrance requirements and modified their courses of study. According to some people; colleges are now dominated too much by the high schools and dire predictions of evil days ahead are made. The pendulum has apparently swung to the extreme in the opposite direction.

Regardless of the soundness of these opinions and the probable solution of a middle ground to be attained in the future, may I remind you of three tendencies which face us and which call for hearty and intelligent co-operation in an effort to meet the problems which are raised.

First, there is the problem of increasing attendance in both high school and college. Of the thirty million school children in the United States between the ages of five and seventeen, more than 90 percent were enrolled in elementary, junior high, and high schools, according to the last report of Commissioner Tigert. Estimates from

[1] Ohio State University.

this same source indicate that for the year 1928-29 there will be enrolled in American colleges some nine hundred twenty thousand students including two hundred fifty thousand who entered college in 1928. From 1890 to 1926 enrollment in the collegiate departments has increased 529 percent. Such an increase is a cause of gratification, but it also gives occasion for serious thinking.

The tendency toward an increase in high-school libraries is no less important. Roughly speaking there are about twenty-five thousand public and private high schools as opposed to less than one thousand five hundred colleges, universities, professional schools, and teachers colleges. While a library of varying size and efficiency has long been recognized as an essential part of the educational apparatus of our colleges and universities, its recognition as an important part of our secondary-school equipment is of comparatively recent development. There can be no question about the rapid future development of the high-school library as an important feature of our educational program, and the call is already heard for trained high-school librarians. Where we shall find them in sufficient numbers to meet the present demand, to say nothing of the future need, is a problem which is causing serious concern.

A third tendency is seen in the attempt to crowd into the junior college, high school, and preparatory school, some of the work of the freshman and sophomore years of college. There has been much discussion as to what work can well be done in high school rather than in college, what standards should prevail, what methods should be adopted, and whether the work can be done as well in high school as in the freshman year in college. This resolves itself into the question, what of the junior college? To what extent can work done in a "properly equipped" junior college be accepted by our colleges and universities? What saving is there, if any, to our universities by the establishment of the junior college? Will the taxpayers support this additional wheel in the educational machine? These and other questions of similar import are being considered at educational conferences.

The relation of the library to these questions is becoming more and more important. Librarians are being asked for opinions and invited to define what they believe to be their contribution to the problem under discussion. If some of the work hitherto done in college is to be transferred to the high school, then unquestionably the library of the high school in so far as it is a factor in this work, must be increased in size, staff, and efficiency. The topic assigned limits me to the consideration of the relations of the college and uni-

versity library to the high-school library, with reference to those students who continue their educational program beyond the high-school stage. Making allowances for necessary variations in standards, equipment, and performance of any plan which may be eventually agreed upon, may I suggest some fundamentals which those of us who are connected with college and university libraries would like to see as part of the pre-college training of every Freshman. I propose to make two groups of my "expectations": first, those which have to do with some of the features of higher instruction in college and university work, and second, attitudes toward college work and its methods which should be pre-requisite for admission to college. The phrase "fundamental" may be interpreted to signify an attitude not held in high esteem in some quarters and vigorously defended in others. I plead guilty to a prejudice in favor of the fundamentalist attitude relative to preparation for college work. Some years of experience with entering classes in two state-supported and two privately endowed institutions, tend to strengthen this prejudice. Let us begin with Genesis.

We may surely expect our prospective Freshmen to be reasonably certain of the letters of the alphabet and particularly of their order. I am serious in making this statement. Ask any college or university reference assistant who has had occasion to help students—not all of them Freshmen by any means—with the use of the card catalogue. Watch students stand before a large card catalogue and note the uncertainty with which they select a drawer of cards and then turn them, looking for the right group of characters to suddenly appear, instead of looking up the desired group. Improved methods of teaching reading have taken much of the drudgery from elementary-school routine, but it is sending to college students to whom, to put it mildly, the alphabet and the order of letters are matters of uncertainty. Modern methods of educational technique have undoubted advantages over old methods however, as long as library card catalogues exist, books have indices, and dictionaries, encyclopedias, and directories retain their present forms, the good old alphabet and the knowledge that "E" comes after "D," and not before, is still useful in the library. Like the definition of words and the use of the dictionary "we know all about it," of course, until we are asked to be specific. The high-school librarian can render real service to the prospective Freshmen by pointing out the necessity for attention to these despised fundamentals.

Let me mention some other fundamentals. Handwriting should be legible. I saw a term paper last year, presented by a Senior in

college, which was the despair of the department of political science. The student was obliged to translate his manuscript before credit could be given him for his work.

The habit of taking notes and citing references correctly in detailed, systematic fashion should be cultivated. There is no reason why a student should wait until he enters college before he realizes the importance of the full names of authors where it is necessary to identify a particular individual of the clan of Smith, Brown, Jones, Williams, or Johnson. Five or ten entries under Smith in a high-school catalogue present no great problem. Five hundred Smiths in a college catalogue present quite a different problem which would be no problem if the student had formed the habit of noting the author's initials or full name.

Similar points should be emphasized in high school respecting the necessity and future value of noting dates, editions, publisher and place, full titles in the case of periodicals, and accurate statements as to volume and series. I knew of a candidate for the degree of doctor of philosophy at a well-known university, whose thesis was accepted conditionally with the requirement that the bibliography be put into acceptable form. His notes were full of unintelligible references to books and journals which he had used during his work, but his references were so vague that a considerable amount of work was necessary both on his part and on that of the library staff, to whom in desperation he appealed for help. It was particularly difficult in his case since many of the titles cited had been obtained from other university libraries, and it was not possible in the short time before the close of the year to get back all the volumes used.

Instruction as to the form in which notes and references should be taken should be a part of the training in high school. The formation of habits of work and method then will save hours of difficulty and needless labor as the student advances in his career.

Abbreviations should be used only when their meaning is known. Unfamiliar terms should be looked up. The hundreds of call slips which come to our desks asking for titles by "*Ibid.*," "*Idem*," and "Tome" indicate that we take too much for granted.

Original ideas in spelling with which our old-fashioned catalogues and reference books do not agree need no comment here. We shall all, from kindergarten teacher up to professor and publisher have occasion to exercise charity in attitude and speech. The high-school librarian may help such errors and point out that such habits of thought and work will constitute an ever increasing handicap. This is as much a part of the duty of the high-school librarian as to hand

out reserve books and to find articles for the term paper. Its value to the student is probably greater than the latter service.

To turn now to the fundamental tools. May we not reasonably expect that in the high-school library, the prospective college student shall learn as a part of his high-school course, to handle intelligently the library card catalogue, to realize that though it may appear in varying forms, it is a tool common to all libraries—public, private, and institutional—and that through its intelligent use, he has a key to information he desires? When taught to use the *Reader's Guide*, he should be told that it is only one of a distinguished family of similar tools and that its use will stand him in good stead when college work and individual research call for his best efforts. He should be taught in an elementary way the use of bibliographical references in text-books and encyclopedias, acquaintance with pamphlets and clippings; in short, he should be trained in the use and correlation of material upon a given topic. It is, of course, true that our high schools will differ widely in the amount of material which comprises the library, and there will be individual differences in the kind and quality of instruction of this sort, but I predict that in time courses will be taught in library methods, and standards of library instruction will be adopted for all class-A high schools which will make unnecessary the time now spent during Freshman Week in lectures by the librarian and his assistants, and on special papers assigned upon the use of the library. These activities at present form a part of the college program which is already entirely too full, take valuable time of the library staff and teaching staff, and can be at best only a hurried survey of a subject which should have developed naturally in systematic training.

The obvious solution of the problem, of which these points are merely selected issues, is the establishment of a standard course of instruction in elementary library methods and in the use of elementary library tools in our high schools and preparatory schools, and until such a course is established as a part of the required curriculum in these schools, to make it a part of the work of the freshman year in college by an extension of present methods. Such a movement is already under way in which three committees, one from the college and reference section, one from the school-library section, and another from the general section of the American Library Association, are invited to determine recommendations concerning these matters, which they will eventually present to various secondary-school associations.

There is also another service which high-school librarians can render to the prospective college student and to the college library

in a way not quite so definite as those mentioned, but no less important. We strive in our division of the educational program to make the transition from one grade to another with as little break as possible. Theoretically we have a broad roadway winding upward at an easy grade of so many feet to the mile. Our prospective students are not, in theory at least, obliged to progress as one climbs the pyramids of Egypt, where two guides are necessary, one to push and the other to pull the panting tourist from one stone to another. Any freshman class will present wide variations, however, in preparation. The requirements of the college program will appear easy and natural to some and to others as the entrance into another world full of bewildering complications. Witness our activities during Freshman Week as an effort to orient the Freshmen, to start them off right, to make the transition as easy as possible. Nearly all colleges are adopting this plan, whether the freshman class is strictly limited to two hundred carefully selected students as at certain endowed colleges in the East or in our state institutions as at Ohio State University, where some three thousand Freshmen appear and claim attention every fall. But what of the library in this connection?

We need to emphasize in high school and preparatory school the fact that certain features of library administration, carelessly dismissed as "fussiness" on the part of the school librarian by the average student, will reappear as barriers in the way of personal freedom during college days. In high school the student was known by all; now he is compelled to register name and address, present on demand satisfactory identification that he actually is James M. Smith, a registered student. Instead of walking into the library and helping himself he *must*—not may or may not as he pleases—look up the books he wants in the despised card catalogue, and present and sign a call slip for the same. Incidentally the student's opinion on first contact is that the library is a "mess." "We had a better one in high school," and often there is more than a grain of truth in his judgment. The books are all "shut off in stacks, at least, all the interesting ones are, and you have to get permission to get what you want." The intricate regulations about "reserves," the recall for graduate, faculty, and class use, seem a "lot of red tape." The comparison of freedom in a school library of one room, with the inevitable restrictions found in our large college libraries is likely for some time to prejudice the Freshman in his relation to the college library, for he is constantly afraid that he is infringing upon some rule.

Here the high-school librarian may do the college librarian and the student an invaluable service. In instructing the student about

the card catalogue, let her point out that its intelligent use will be a necessary part of his educational progress in high school and college; that as libraries grow larger, they become inevitably more complex, and that the principle of the greatest good for the greatest number holds with increasing severity upon individualistic freedom of thought and action as the numbers increase.

Relatively few students decline to co-operate in regulations for the common good of all when they understand the why of the matter. Little opportunity is possible in a college of ten thousand students for individual explanation of restrictive rules. Any preparation, therefore, which can be done by the librarian in high school concerning the reasons for well-known forms of library practice, and any explanation of differences in method which the student is likely to meet as he makes the transition from high school to college, is a contribution of no small moment.

One other contribution which the high-school librarian can, and I believe should make, is in the direction of urging the student to accept responsibility for doing assigned work on his own initiative, to search out his own material, and above all, to form his own judgments and opinions after reading. I should like to see in every library, displayed in a conspicuous place, the sage counsel of Lord Francis Bacon, "Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider." To educate is to enable one to form and express sound and reasonable judgments, and the process cannot begin too early. In the high school, certainly!

Comparison of statement and opinion is an essential prerequisite to the formation of judgment, regardless of the question at issue. While there will be variation in high-school libraries, librarians can greatly assist in the process of developing initiative and self-reliance and in developing the spirit of intellectual curiosity, which characterizes the student best qualified to profit by continued educational work. There are too many "spoon fed" students coming to college. It is far easier to select a mass of material yourself and say to the student read this and this and then write your theme, rather than to encourage the student to find the material, by devious ways perhaps, but at least to make the responsibility his. It is a mistaken kindness to do too much for the student in his high-school days. We need the discipline of individual effort, aided, and directed, when necessary, but not done for the student with the mistaken idea that you are saving his time and incidentally yours. Students who have made a beginning in the development of individual independence in thought,

who can make a comparison of points of view from printed resources before entering college, are the students most likely to be successful both in their collegiate career and in after life.

We have always before us the duty of feeding the flames of intellectual curiosity, of developing the will to know and to investigate, and of encouraging the student to interest himself in some field of knowledge, discover what has been done, thought, or said in this field, and then extend the boundaries of knowledge a bit further by his contribution. The development of this spirit of investigation is a natural gift in some cases, in others it must be developed carefully and slowly until the spark becomes a glow and finally breaks into flame. All teachers and librarians should accept this challenge and begin the process early. A student who does not discover books as tools and as sources of pleasure and inspiration before he reaches college loses much and starts out under an undeniable handicap. It is too much to expect that books and reading will appeal to all high-school students. Some are not sensitive to their appeal. Distractions in school life are many. In college they increase fourfold. The reading habit unless formed *before* college days is rarely formed *afterward*. No investment, in an intellectual sense, which the young high-school student may make in educational methods, will pay greater dividends than that of the formation of the reading habit and the development of taste and discrimination in his reading.

There is nothing in what I have said that is new. Some high-school librarians are doing all that I have outlined and more. What is seen and done by the few, must be recognized and carried out by the many. A course, such as I have mentioned, established in our twenty-five thousand high schools would show remarkable results both in greater efficiency in teaching and in the quality of work done. For that proportion of the school population who may not enter college, the course would also have value. The public library, well called the "university of the people," and the adult-education movement, in which many organizations are putting thought, time, and money, will attract the youth who cannot take advantage of what the college and university may offer. With an introduction to books and reading received in high school they should be among the first to recognize the opportunities offered through these means and be in position to take intelligent advantage of them. Let us extend what has already been well done in many places in our secondary-school system to the system at large and make the roadway of opportunity smooth and gently rising for the feet of those who shall lead the generations of tomorrow.

The Function of the School Library

W. W. CHARTERS[1]

THE SCHOOL library has three major functions. In the first place the school library which is fully performing its duty enriches the curriculum of the school to which it is attached. This function probably requires no elaboration.

Of more importance, however, than the foregoing function is a second service which the school library can render. Its main function, as I see it, is to foster a love for the library room and for books. If we instill into the children a deep love for the library, we control their perpetual interest in books and libraries. The enrichment of the curriculum, while valuable, is secondary in importance to this function. Love of books is an emotional objective which must be sought as earnestly by the librarian as are the other aims of the school library. In creating this love for the library it is quite important, of course, that the books should be interesting. There should be plenty of easy books for the children to read. It is better to read six different primers than to read one primer six times. But particularly the atmosphere of the library should be interesting and pleasant.

The attainment of this objective is through the personality of the librarian. If the librarian loves little children, is patient and affable, they will soon seek the library as a haven of rest from the world of infantile worries. No librarian should be so busy that she does not have time to cultivate the good will and affection of her infant visitors.

The third major function of the library is to teach self-help. The librarian is mistaken if she feels that it is her function merely to get the books the children want and to make herself generally useful. This is an unselfish point of view, but it defeats an important purpose of the library which is to teach children how to get books for themselves. The easiest thing to do is to adopt the first alternative, but the ideal method is to make all books on all shelves available for all children. The librarian can spend her time wisely in showing the children where the books are located, how to get them, and so on.

In doing this, according to Miss Fargo in her new book on the Library School, the first step is to teach the children where the books are. They should be shown how to use the dictionaries and encyclopedias, where to find the newspapers, how to make simple bibliographies, and even simple methods of taking notes.

[1] Bureau of Educational Research, Ohio State University.

In accomplishing these ends there are two methods to use. One is the lecture or classroom method and the other is training on the job. Of these the former has its place, but, in the last analysis, training on the job is fundamental. Like every art, the art of finding materials in books is learned by trial and error with somebody at the elbow of the learner to help him when he makes a mistake.

Special Education

Cleveland's Classes for Gifted Children

R. G. Jones[1]

What is intelligence? What does an "intelligence test" measure? So many conflicting views are current that I propose for the present to skirt the entire controversy. I assume that there are mental differences among children; that some learn more readily than others, that some display aptitudes which others do not, that some are more adaptable to new situations than others.

On this assumption in Cleveland we have used intelligence tests to classify all children into what we believe are homogeneous groups. The classes in which the unusual children are grouped are known as the "High I. Q." classes, or as the classes for "gifted children." The classes are limited in size from twenty-five to thirty. The children range in ages from six to twelve years. They are divided into two groups—the lower, embracing those who ordinarily would be classified in the first, second, and third grades; and the upper, for those of the fourth, fifth, and sixth grades.

In the morning the children gather about a table at which the teacher sits as part of the group. The usual curricular studies are handled much as they are in other rooms. But only the mornings are devoted to this routine, since experience has proved conclusively that these children can do, as a rule, about as much in half the time required by other children. In the afternoon, the French teacher comes. While she remains, only French is spoken. She may be followed by the special art teacher who is attempting to point the way to mediums of valid self-expression. There is still enough left of the day for an excursion, perhaps to a newspaper plant, a department store, the Museum of Art, the Museum of Natural History, the city hall, a great factory, or the municipal zoo.

Our theory and practice have been that effort should be exerted to enrich the educational life of the children rather than rush them through the curriculum as rapidly as possible. It is a disservice to the child to throw him at the age of thirteen or fourteen into a college community of young men and women four or five years older, among whom he will be a social misfit. At present we are

[1] Superintendent of Schools, Cleveland.

concentrating on French and art, which lead to measurable and demonstrable results, and pursuing only such other interests as we believe will result in a thorough and positive grasp of some definite value. We are seeking mastery of subject-matter. The cost of these classes is borne in part by the Cleveland Board of Education, in part by friends of the experiment.

Inquiry among principals and others responsible for the administration of the classes shows, on the whole, that they believe in the special classes and approve the present rate of progress. They found the children unspoiled and unaffected, and also a splendid attitude on the part of parents. Every principal states that there should be enrichment rather than acceleration.

One unforeseen result has been altogether to the good. Now the teacher must come under new examination. One with a slow-learning rate cannot remain the master of a classroom filled with high intelligence quotients. Thus the homogeneous grouping of teachers as well as of children seems to be indicated.

The classes have not been in existence long enough to measure the terminal results. Pupils who have gone from the gifted classes into the junior high schools and even into the senior high schools have done everything that could have been expected of them. They have earned high grades and have showed real leadership.

Are we training for leadership, however? What is the relationship of high intelligence to leadership? Intelligence is defined by our psychological clinic in Cleveland as "a person's ability to meet a new and unexpected situation." Because of so much difference of opinion as to the relationship of intelligence to leadership, we must wait until the psychologists have carried their researches farther before we can make general conclusions as to the theory. But practice is a different thing, and in practice we have found in Cleveland something that works, something that gives education in terms that are valid for certain exceptional individuals, and the sum total of whose results make for a happier, more vital, and industrious school life.

Teaching the Hard-of-Hearing Child

Olive Whildin[1]

A few years ago the educational world was amazed to learn that there were three million school children in the United States with defective hearing. It was hard to believe, and yet those of us

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who have been investigating this statement are ready to support it. Dr. Edmund P. Fowler was partly responsible for this discovery.[2] It was not made without sufficient proof, for in his clinic at the Manhattan Eye, Ear, and Throat Hospital he has conducted exhaustive examinations, investigations, and researches which have strengthened this belief.

Many teachers have been aware that there were hard-of-hearing children in their classes and have made special seating arrangements for them. But they have not realized that there might be several other children in each class who because of the invisibility of this defect had not had special seating arrangements made for them. The

TABLE I

SCHOOL YEARS REPEATED BY FIFTY DEAFENED CHILDREN

School Years Repeated	Number of Pupils	Total Number of Years
(1)	(2)	(3)
One half-year	17	8.5
One year.....	12	12.0
One and one-half years	8	12.0
Two years.....	6	12.0
Two and one-half years	2	5.0
Three years	5	15.0
Total	50	64.5

handicap of defective hearing is almost as prevalent as the handicap of defective sight, but it is so difficult of detection that it escapes notice. It is hard to discover the child with a slight defect in hearing. He is hardly conscious of it himself. The danger of the slight defect is that it often grows into a condition too serious to be helped.

We, as teachers, are primarily interested in the child as a unit of society. Our problem is to ascertain to what extent a hard-of-hearing child becomes an economic and social burden to society. In the studies that Pintner made he found that the deaf child was four to five years slower than the normal child in achievement. He did

[2] Fowler, Edmund Prince, and Fletcher, Harvey. "Three Million Deafened School Children," *Journal of the American Medical Association*, 87:1877-82, December 4, 1926.

not distinguish, however, between the deaf and the hard of hearing. Since his studies were conducted in classes and schools for the deaf rather than among deafened or hard-of-hearing children endeavoring to work in classes with normal-hearing children, his results are probably a little too extreme for the type of child we are now considering.

If two or even three years for partial hearing be allowed, we still find great disparity between the achievement of the normal child and the deafened child. Of seventy-five children who are now receiving lessons in speech reading from one teacher in Baltimore fifty are from one half-year to three years retarded. These fifty pupils have lost 64.5 school years when reckoned by the summary given in Table I. Of eighty children taught lip reading by the same teacher last year, seventy-seven have been able to go on with their grades. In fact, we point with pride to four children who were able to secure first place in their classes this year. All these children have a loss of 30 percent or more of hearing in both ears.

The reports of the Vocational Committee of the American Federation of Organizations for the Hard of Hearing stress the importance of their work from year to year in retraining, and in opening new fields of labor for the hard-of-hearing adult. Every local organization finds that its vocational department is its strongest and most vital asset. Because of their social-service activities many of these organizations have been allowed to participate in the community fund or community-chest drive of the city in which they are located. The necessity for trained workers to handle the economic placement of adult deafened persons demonstrates the burden which the hard-of-hearing children in the public schools may become unless we take hold of the problem.

The discovery of the three million deafened school children was made by the use of the 4-A audiometer, a phonographic machine especially made for testing the hearing of children in groups of forty. Those of us who recall the deep interest of Dr. Alexander Graham Bell and who know of his great support in the cause of the deaf by the establishment of the Volta Bureau in Washington for the spread and diffusion of knowledge concerning those with impaired hearing and his great contribution to science brought about by his desire to alleviate the condition of deafness, feel that it is fitting and right that this 4-A audiometer should have been the indirect contribution of this great friend. This audiometer can be operated in the ordinary classroom, by anyone following the simple directions that accompany it. It is a standardized test to be used with all school children. It selects for the research worker's laboratory those whose defect in

hearing is so slight as to be almost negligible; those who should receive the attention of the otologist; and finally those who should receive special educational work.

The Bureau of Education at Washington has with the aid of the American Federation of Organizations for the Hard of Hearing prepared a pamphlet to be used as a guide in the handling of such children.[3] The recent folder, *The Deafened Child*, tells us what to do with the hard-of-hearing children in our schools. The recent conferences of the Division of Anthropology and Psychology of the National Research Council have brought to our attention that deafness in all its phases is a vital, throbbing problem, not only in the hearts of our people, but in the minds of our scientists today. We do not have to search far to find where experiments in otology are being carried on, or where interest is being shown by scientific men and women.

The handling of the specific problem of the hard-of-hearing child has thus far been left to teachers in various scattered communities. These teachers working more or less alone in a large school system have found their task so overwhelmingly gigantic that there has been little real contribution to the literature of the field. Now, however, since the interest of psychologists, physicists, and anatomists has been aroused, we may look forward to giant strides.

There are three distinct steps in the care of the deafened child—detection, medical examination and care, and education and rehabilitation. It is this last step which differentiates the deafened or hard-of-hearing child from the deaf child. The latter has been taken care of in this country since 1817 when the first State School for the Deaf was established at Hartford, Connecticut, in day or residential schools in segregated groups. The number of deafened children, however, makes it unwise to think of them apart from the public-school systems.

The detection of the deafened child having been made comparatively easy by the invention of the audiometer, there follows the medical examination to ascertain the cause and prescribe treatment. There are many obstacles in the way of the satisfactory accomplishment of the proper medical examination. The audiometer detects the child with so slight a defect that unconvinced parents may be unco-operative or they prefer to follow the dictates of the family physician who, although conscientious, too often knows little or nothing of the science of otology. The school doctor, also, may not

[3] American Federation of Organization for the Hard of Hearing. Commission on Education. *The Hard-of-Hearing Child.* Washington, D. C.: Government Printing office, 1927. 14 pp. (Bureau of Education, School Health Studies No. 13)

have the necessary instruments for such an examination; the otological clinic may be situated in an inaccessible location; or the examining physician may be old-fashioned enough to abhor the idea of "the lip-language" as some doctors call it, and conscientiously advise against it. In spite of these and many other obstacles in the way of proper ear treatments, there are thousands of children receiving the care they need today, but there are many more thousands who are growing to manhood and womanhood hearing less and less of what is said to them. It is the otologist's responsibility to do what he can to restore the hearing of these children to normal and failing that he must offer some substitute for hearing.

There are two such substitutes, a hearing device and lip-reading, or the better term speech-reading. There are a great many hearing devices on the market; the cost of most of them is beyond the financial reach of the ordinary school child. There is some question, too, of the practicability of the use of these devices outside the classroom. However, those provided for the classroom are of inestimable value for instructional purposes. The teacher may talk to twelve or twenty children at the same time and she may re-educate the latent hearing.

Of the 14 percent of those tested who have defective hearing, only about 2 percent must have speech-reading. No child should be taught speech-reading unless medical aid pursued for a reasonable length of time has failed to restore the hearing. Any child, no matter how slight the hearing defect, who is doomed to progressive deafness should be in a speech-reading class in order to prepare him to face the future. There are so many conditions which must enter into consideration that it is a risk to draw arbitrary lines in classifying hard-of-hearing children. For general guidance a loss of 30 percent of hearing in both ears is enough to place a child in a speech-reading class. An approximate loss of 50 percent in both ears with a slump in classroom work should place a child in a conservation-of-hearing class. In this group the child spends a part of each day with a special teacher of speech-reading. He is taught speech-reading, trained in residual hearing, given corrective speech exercises, and assisted in the preparation of lessons in which he participates in classes with children of normal hearing. An effort is made to return him as soon as possible to full-time work in the regular class with an hour or two of speech-reading a week given by a visiting teacher. An acquired loss of 75 percent or more of hearing in both ears is not enough to place a child in a class with congenitally deaf children unless his language is so poor and his speech so bad that he can fit

only into the very slow and specialized form of instruction used by teachers of the deaf. His place is in the conservation-of-hearing group.

Speech-reading is the most practical means of communication for the partially deaf as well as the totally deaf. It is by no means a new art, for in 1648 John Bulwer defined it as "That subtle art which may enable one with an observant eye to hear what any man speaks by the moving of his lips."

A careful investigation of each child found to have a type of deafness that may be progressive or irremediable involves a study of his environment, including home conditions, school life, relation to his teacher, and to the children on the playground. With this data in hand, a visit is paid to the parents to acquaint them with the purpose and value of speech-reading and to secure intelligent co-operation in the use of it in the home. The classes are organized on the age-grade basis usually having not more than five in each speech-reading class. The best results are secured with only three in a class. There are three grades of speech-reading lessons prepared by the teacher to meet the needs of each particular group. Those for the primary group are very simple in language, concrete in thought, and of interest to the pupils of the first three grades. No abstract thoughts are used in the lessons prepared for those below the junior high-school classes. Each lesson is divided into three sections.

The movement being studied in that particular lesson is given in sentence form only, and always in connection with concrete material of some kind that is handled by the children. There is a threefold purpose in giving a complete thought built upon a picture or written form of the drill-word. It provides an opportunity to make speech-reading interesting and colorful, develops association of ideas, and affords the use of two avenues to the mind. The second part of the lesson is the story. It may be an original or adapted story prepared by the teacher providing further drill upon the movement. The questions upon the stories provide practice in reading question forms upon the lips. The last part of the lesson is probably the most important from the point of view of the grade teacher. The children call it a game. In reality it is a drill upon some phase of related English, geography, history, or other grade subject given in as attractive a manner as possible with competition to keep up the interest of the children. Our pupils go away from these classes exhilarated with the sense of the power of accomplishment and best of all with added knowledge naturally acquired. The lessons in all these courses are based upon the visibility of the movements; those

most easily seen upon the lips are given in the earlier lessons. The difference in the three grades of speech-reading lessons is in content and in method, not in the movements of the lips being taught. When we consider that, according to Edward B. Nitchie, about 50 percent of the speech movements are homophenous, that is, have the same appearance on the lips, or else are confusing, that 35 percent are invisible, and that the eye can see only about eight or nine of the twelve or thirteen movements in speech per second, it is evident that a great deal of time must be spent upon those that are useful in speech-reading in order that these difficulties may be overcome. A high degree of development in attention and concentration must be reached, an almost phenomenal quickness in eye and extreme alertness must be had by the speech-reader. In addition to these valuable assets for any person, deaf or otherwise, memory and imagination are developed by the sense-training exercises which precede all lessons in speech-reading as well as by the lessons themselves.

In addition to the full-time teacher with the class of hard of hearing, there is another group of speech-reading teachers who look after the more numerous but less seriously handicapped children. These teachers go from school to school two or three times a week giving lessons in speech-reading. Arrangements are made to suit the conditions in each building as far as possible so that the children do not miss any of the major subjects in the time spent on speech-reading lessons. Speech-reading teachers must have the best possible training and experience. They must study the abnormal traits of their pupils and help overcome them; they must be able to do developmental work with their pupils, not merely informational; they should develop special abilities, desires, and attitudes; they should provide for growth in mental achievement, not merely for a pouring in of facts; last of all they must make their teaching diagnostic so that each half-hour lesson may be adjusted to the mental capacity of each child.

As the child grows to the junior high-school age and is faced with the selection of a vocation, the speech-reading teacher is called in by the expert in vocational guidance to advise upon the proper selection of a lifework. In giving this advice the speech-reading teacher must be familiar with the medical diagnosis of the child's defective hearing and the kinds of work which should be avoided for fear of increasing that child's deafness.

Those of us who have the good fortune to be identified with this work call ourselves the salvage corps of child life. We are reclaiming, rebuilding, restoring for the future.

Teacher Training

Subject Combinations in Ohio High Schools

Earl W. Anderson[1]

An analysis of the programs of inexperienced teachers in the high schools of Ohio was made from reports in the office of the State Department of Education. These reports included 98 percent of the county, 89 percent of the city, 81 percent of the exempted-village, and 2 percent of the junior high schools. The total number of these teaching positions occupied by beginning teachers was 866 in 1927-28 and 635 in 1928-29, representing a decrease of 231 teachers, or 27 percent, in one year.[2] The percentage of new teachers in each division was: county, 82; city, 15; and exempted villages, 3. The subjects being taught in at least two classes by these teachers in 1928-29 were English, 205; history, 86; mathematics, 86; home economics, 82; Latin, 66; science, 50; French, 29; industrial arts, 27; and music, 26. The subjects taught most often alone expressed in percents of total positions involving that subject were music, 58; industrial arts, 55; agriculture, 42; home economics, 18; mathematics, 15; English, 15; and history, 13. The following subjects were not taught alone: art, biology, bookkeeping, chemistry, civics, commercial law, economics, French, general science, geography, hygiene, occupations, physics, physiology, problems of democracy, public speaking, science, shorthand, sociology, Spanish, spelling, typing, and Latin. In the two-year period the following subjects were taught alone in either city or exempted-village high schools: biology, 1; bookkeeping, 3; general science, 2; geography, 3; physics, 1; public speaking, 1; science, 1; Spanish, 1; sociology, 2; typing, 2; and French, 1. The most frequent combinations were:

English with Latin, history, home economics, French, mathematics, and science.

History with English, civics, mathematics, geography, and Latin.

Mathematics with science, English, and history.

Latin with English, French, history, mathematics, home economics, and science.

[1] Ohio State University.

[2] The complete text of this address was published in the *Educational Research Bulletin*, 8:234-38, May 29, 1929.

Home economics with English, history, civics, and geography.
Industrial arts with mathematics, history, geography, science, and English.
Music with English.
Agriculture with industrial arts, mathematics, and history.
French with English, Latin, history, home economics, and mathematics.
Botany and zoology with history, chemistry, general science, English, mathematics, and agriculture.
General science with mathematics and chemistry.
Science with mathematics, English, home economics, and agriculture.
Typing, bookkeeping, and shorthand, most often combined among themselves, found occasionally with English, history, and mathematics.
Chemistry with general science, science, history, and home economics.
Physics with science.
Geography with English, history, mathematics, and civics.
Spanish with English and Latin.

In 1928-29 the positions including two or more classes in the subjects specified were as follows: Spanish, 2; physics, 1; botany and zoology, 2; geography, 9; chemistry, 6; and on up to home economics, 82; mathematics and history, 86 each; and English, 205.

Perhaps the greatest assistance which this study can give to those engaged in teacher training is through what we might call the negative end of the scale. By knowing what combinations are taught least frequently in the high schools they can divert students from preparation for these positions.

The next step planned in this series of studies is to make a minute analysis of supply and demand in Ohio high schools as it affects individual subjects. This analysis will include the subjects most often found in one, two, and three subject combinations with English, the number of teachers majoring or minoring in English in Ohio teacher-training institutions, and the number available each year in this subject through country examinations.

Are Our Programs of Teacher Training Practical?

John W. Withers[1]

I shall preface my answer to the question, "Are our programs of teacher training practical?" by first proposing several tests. The first is that the practicality of programs of teacher training must be judged

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by the extent to which and the manner in which they meet certain conditions. These conditions vary in their presence and their relative importance, from one time to another, from one state to another, from one service area to another, and within the same state. Programs considered practical ten years ago could not be so considered now, because the requirements of the occupations for which teachers must be trained have changed since then. Moreover, a program that would now be practical and satisfactory for Mississippi, for example, could not be considered for Ohio since the conditions which determine the practicality of teacher training in these two states are widely different.

Hence, to determine the practicality of the present teacher-training program for the state of Ohio would require a survey of the service areas involved. In making this survey such questions as the following would have to be answered in terms of ascertained facts: For what occupations should teacher training be provided at public expense and under state supervision? What is the present and the prospective annual need of new recruits for each of these occupations? To what extent may and should existing agencies be relied upon to meet this need in a satisfactory manner? What new agencies, if any, must be provided at public expense, when should they be ready, and where should they be located? What legislation has been passed, or is anticipated, affecting the standards of teaching and the types and qualities of school work which teachers are expected to do? What is the prospective length of teaching service of those who are to be trained, and to what extent does this vary among the occupations for which training must be provided? What is the native capacity, personal adaptability, and general fitness for the profession of teaching of the students that can be secured for training, and what is the extent and quality of their previous education? What funds are available or can be made available for the professional education of teachers? What amount of time has been, or may be allotted to the preservice part of the program of training? What division of function and responsibility has been and should be determined by the accessibility of the various teacher-training institutions with respect to the special as well as the general needs of the service areas involved? To what extent do economic conditions and the attitude of local communities toward education in general and toward teaching, in particular, affect the choice of the students for teacher training in the various cities and sections of the state? What facilities are there for practice teaching and student observation? Are the facilities adequate? What prospective remuneration, security of tenure,

and opportunities for advancement may be anticipated by those who are preparing to teach? What are the working relations of the faculties of the teacher-training institutions to each other and to the field forces of education in the service areas of these institutions? To what extent do these relations affect the choice of students and their training in service as well as their preservice training? What changes are going on in the school system of the state as a whole and of the various local communities that call for the re-education as well as the further education of teachers after they have entered the service and what opportunities are there for their broader culture and their professional stimulation and improvement?

It is obvious that every one of the conditions represented by these questions is important. No teacher-training program that aims at the highest practical efficiency can afford to ignore any one of them. The professional education of a teacher is, in reality, a lifelong process and also a responsibility of the whole community. It should not, therefore, be wholly confined to any one period of the teacher's life, or to any one institution.

Fortunately, because of certain recent research studies, notably those of Buckingham and Myers, some of these questions, but by no means all, can now be fairly well answered. Further studies are needed and adequate provisions should be made by the state for continuous, up-to-date information in respect to these conditions, the changes taking place, and the influence which these changes should exert on the programs of the teacher-training institutions of the state. The practicality of these programs is determined not alone by their suitability to present requirements, but also by their ready adaptability to new and changing needs in the recruiting and professional education of teachers and also in their placement and continuance in service.

II

The second test is concerned with the way in which the teacher-training facilities and agencies of the state are organized and articulated with the various units of the school system, to deal effectively with these conditions. On this subject the following questions should be answered: What provisions are made to determine and maintain an optimum relationship between the preservice and the in-service parts of the teacher-training program and to allot to each of these its proper share of the total responsibility? What effort is made to secure that relationship between the formal and participatory factors of training that will be most stimulating and encouraging to the con-

tinuous growth, first, of the teachers; second, of the faculties of the teacher-training agencies; and third, of the field forces of principals, supervisors, and superintendents? What is being done to keep the teacher-training faculties in intimate touch with the vital problems which are faced by their graduates while teaching? What is being done to keep the superintendents, supervisors, and principals acquainted with the spirit and aims of the teacher-training faculties that supply their needs? What is being done to eliminate unnecessary confusion and wasteful effort in teacher-training by promoting satisfactory teamwork between the forces responsible for the preservice and those responsible for the in-service phases of such training and by establishing throughout the state the feeling that the total task must be a shared responsibility of both faculty and field force? Is the work of all the agencies now engaged in the training of teachers under the authority and supervision of the state, so organized and articulated that no part of the service is being neglected while other parts are oversupplied? Are prospective teachers, who have met the state's requirements for certification, being promptly and properly placed in the service of the schools?

A practical state program of teacher training will not be concerned merely with the proper selection and training of teachers. It must see that no part of the service is neglected or overdone and that trained teaching service which has been provided at the expense of the state is fully and effectively utilized. The function of such a program is threefold; namely, the discriminating selection, the suitable training, and the intelligent placement and supervision of teachers.

III

A state program is certainly not as practicable as it should be if it permits the expenditure of effort on the professional education of a poor quality of students, when with a little co-operative effort, superior students could be secured. This third test requires continuous study and appraisal of the various conditions that influence the choice of students. These conditions are partly economic, determined by the accessibility of the facilities for training and the opportunities for local employment of high-school graduates at good salaries; partly social, due to the general attitude of the people of the community toward the importance of education and the necessity for high-grade service in the public schools; and partly professional, determined by the general interest among those already engaged in education in elevating the standard and increasing the prestige of the profession of teaching

through a wise choice of its new members. There is increasing need of the highest available ability in every occupation within the profession of education because of the growing complexity and importance of the problems that have to be solved. This statement applies to elementary as well as to secondary and higher education. Too often the more promising high-school students are advised by their teachers and principals against entering teacher-training institutions and preparing for service in the elementary schools.

When the Harris Teachers College was opened in St. Louis, and for some years thereafter, graduates of the city high schools were admitted to the college without examination. The faculty, in order to maintain a reasonable standard of efficiency among the graduates of the college, found it necessary to fail, in some subjects, as many as 25 or 30 percent of the students. Complaint to the high schools concerning the inadequate preparation of their graduates invariably met with the response, "You cannot expect anything better, because you get only our poorest students." Investigation showed that this statement was largely true and that the high-school faculties were advising their stronger students who thought of teaching to go on to college and prepare themselves for positions in the high schools. Consequently almost half of the students who came to the Harris Teachers College were in the lowest third of their classes at the high schools and 92 percent of our failures belonged to this group. In time, however, the number enrolling became larger than was needed. A selective method of admission was decided upon which excluded graduates who had ranked in the lowest third of their classes at high school and admitted without examination only those who were in the highest two-thirds.

The immediate result was a vast improvement not only in the ability of the students and the quality of their work but also in the spirit and attitude of the entire student body. We were admitting graduates from five public high schools of the city, and the new plan of admission furnished excellent opportunity to compare the work of the students from these schools and to determine their relative standing, as judged by members of the faculty of the college and by the principals and supervisors in charge of the apprentice work of the students before they graduated. These ratings were reported each term to the principals of all the high schools and also to the superintendent. The effect of the co-operative study of these reports was a decided improvement in the interest taken by the high-school faculties in the type of students sent to the college, and a marked disposition to encourage the better rather than the poorer students to come; so that

when the new plan had been in operation for five years, 72 percent of the students from these five schools, who came to the college, ranked in the highest third of their classes.

While these students were on the average younger than those who had previously entered, the difference between what could be accomplished with them and with those who had ranked in the lowest third of their classes is almost unbelievable. Students of the first group had been educated during four years in high school in the expectation of distinguished achievement and in the habit of succeeding; while many of those in the second group had been consistently accustomed to failure. They had become accustomed to low-standing and lack of confidence in their own ability. If members of the first group did not succeed in their initial effort to solve a difficult problem in teaching, they tried until they did succeed. They expected to win and it was comparatively easy to develop in them an active interest in the independent solution of their problem and a disposition to take advantage voluntarily of available opportunities for growth and improvement while teaching. This was not true of the second group. If a problem did not yield to the first effort, they showed little disposition to try again. They waited for assistance, to be told or shown what to do, and were generally not inclined without considerable inducement to take steps toward professional improvement.

After long experience with these two types of students, I am convinced that the importance of a right choice of students for preservice training in any state or city school system cannot be overestimated and that too much cannot be done to promote among school men and women and the people generally an active and continued interest in the problem of recruiting the most desirable students for the teacher-training institutions.

The value of this effort is not confined to the improvement of teaching in the elementary schools. As a matter of fact, the outstanding leaders in American education at present, as well as the distinguished leaders of the past, almost without exception began their professional career somewhere down the line as classroom teachers. For this reason alone there is no feature of the program of education in any state more important than the effort made to concentrate the organized educational and civic forces on the wiser selection and more efficient training of teachers to the end that increased popular appreciation of the teaching profession may be established and fully justified by the recognized high quality of those who are entering it and by the positive evidence of the improvement of public education resulting therefrom.

Many states are becoming alive to this fact and much significant work of this sort is being done. For years the New York State Teachers Association has been interested in the selection and training of teachers. A little more than a year ago, under the leadership of Dr. Ned H. Dearborn, of the State Department of Education, and Superintendent E. C. Hartwell, of Buffalo, who was then president of the State Association, unusual emphasis was placed upon the study of this problem. The work of a special committee of the Association was ably supplemented by the secretary of the State Teachers Association, who is also editor of its official organ, *New York State Education*. The Council of City School Superintendents, the State Association of District Superintendents, and the Association of Academic Principals also lent their assistance. Eight issues of the magazine were devoted almost exclusively to teacher training, the material being selected from seven hundred and ninety articles on teacher training written by teachers, principals, supervisors, and superintendents throughout the state.

At the following annual meeting of the Association the special committee made a report embodying ten specific recommendations concerning such matters as curricular revision, requirements for admission, extension of practice-teaching facilities, over-lapping of courses, uses and kinds of subject-matter, individual instruction, interchange of critic teachers and other instructors, selection of faculty members, and state administration of the entire program. The reports and articles resulting from this state-wide campaign are valuable contributions to the literature of teacher training.

IV

A state program of teacher training should also be judged by the provision which it makes for the proper placement of graduates and for preventing overproduction in some occupations while others are unduly neglected. Recent study of conditions in a number of states shows that this fault is exceedingly common and in grave danger of becoming more so. The present situation in Pennsylvania is in certain respects typical. Until about a year ago, Pennsylvania relied almost entirely upon the colleges of the state for its supply of high-school teachers. A card sent to all the colleges requesting information as to the number of graduates for each of the five years from 1923 to 1927 inclusive, and the number who went into teaching, procured a complete response from 25 institutions. Of all the graduates for the five-year period, 33 percent were reported as having gone into teaching, for the most part, in junior and senior high schools of the

state. The reports also showed that while the total number of graduates had increased during the period by 35 percent, the number who went into teaching had increased 95 percent. Assuming that these colleges are representative, the evidence shows that the colleges this year are sending approximately twenty-two hundred graduates into teaching and that this number is now increasing at the rate of two hundred per year. Information obtained from the Teachers' Bureau of the State Department of Education showed that the total number of high-school teachers increased from eleven hundred in 1900 to more than fourteen thousand in 1927. From 1900 to 1910 the rate of increase was 154 each year; from 1910 to 1920, 452; from 1920 to 1925, 855; for the year 1925-1926, 1,330; for 1926-1927, 930; and for 1927-1928, 690.

These figures show that the net increase in the number of high-school teachers mounted rapidly from 1900 to 1925 and decreased almost as rapidly since that time. There is also evidence that, because of larger salaries and more favorable conditions of employment, the average turnover of high-school teachers is becoming less each year because the average tenure is longer. These two factors combined indicate that the total number of new teachers needed annually to fill vacancies and provide for increased enrollment is now almost statical and likely to decrease slightly in the future. The estimated need for this year is twenty-four hundred. The colleges of the state are therefore practically supplying the need at the present time and the indications are that the supply will exceed the demand in the immediate future. Meanwhile, fourteen state normal schools have been converted into teachers colleges offering four-year curricula and also authorized to train teachers for the high schools. A large percentage of the students now enrolling in these institutions intend to become high-school teachers and have no intention of teaching in the elementary schools.

It is evident therefore that Pennsylvania is headed toward an oversupply of high-school teachers. At the same time, with the exception of the larger cities, the annual need for new elementary teachers, who can meet the present state requirements for certification, which are certainly not too high, is much greater than the supply. The problem, therefore, of articulating the agencies and adjusting the conditions in the professional education of teachers in Pennsylvania is one of importance. It is not easy to say what its solution will be. Many difficult questions will have to be answered. For example, Is the professional education of high-school teachers that is being furnished by the arts colleges satisfactory? If not, what is

wrong with it? Can it be made satisfactory? If it can, should the state continue to rely upon these institutions to train its public high-school teachers? Is the unsatisfactory service of these institutions such as to justify the state in ultimately taking over the professional education of all teachers for the public schools, and is the situation one that calls for the greatly increased expenditure of public funds that this would require? What, in fact, are the essential requirements in the professional education of teachers, and what is the proper relation of professional to academic or cultural education? Is the right solution of this problem one that calls for a shared responsibility and distribution of function and effort between professional schools of education and colleges devoted to academic and cultural education? Those who are responsible for the State program of teacher training in Pennsylvania cannot avoid the necessity of giving immediate and serious attention to the solution of this problem if a very undesirable situation is to be avoided.

Pennsylvania does not stand alone, however. In one way or another the same problem must be faced in other states. Myers' study shows that among the features of the Ohio program is not only misplaced energy and faulty adjustment among the recognized agencies of training but also the failure to fill vacant positions in the state by those who are best qualified on the score of their preservice education.

V

Thus far we have considered chiefly external adjustments. The fifth test applies to the internal adjustment of personalities and points of view among those primarily responsible for the professional education of teachers. Lack of such adjustment often seriously interferes with the effectiveness of a program that is otherwise excellent. Superintendents, principals, and supervisors may criticise with considerable injustice the work of the normal school or teachers' college as visionary, impractical, and out of touch with the real problem of teaching. I have actually heard elementary principals tell young graduates appointed to their schools to forget as quickly as possible what they had been taught at the normal school and to begin professional education all over again under their supervision. This is vicious.

On the other hand, teacher-training faculties are in danger of too great isolation from the actual work of the schools. Tenure of position in these institutions may be so secure, the social status of the faculty member so firmly established, and the notion of self-sufficiency so deeply rooted, that essential needs of public education are easily

overlooked. It is easy for members of such a faculty to develop a feeling of independence, idealize their own philosophy of teacher training, and establish a satisfactory sense of superiority that is well-nigh fatal to their professional growth and improvement. Prospective teachers who have had their preservice training under such a faculty are often overwhelmed by the difference in theory, point of view, and practice which they had acquired during instruction from what they find in actual operation in the school. This condition, wherever it exists, is almost criminal. It arises out of lack of contact and co-operative relations between the teacher-training faculty and the forces in charge of the schools. It is essential that these two groups should understand and respect each other. Both must be recognized as parts of the total school system; both have a common purpose, and both have similar conditions and problems to solve. Their professional interests are ultimately the same, and the more each knows about the other, the better will be the work of both.

In establishing and maintaining right co-operative relations between these two groups, the State Department of Education must play an important part. The State Department in New York is actively at work on this problem at the present time. With the help of the teacher-training committee of the State Teachers Association, a letter, accompanied by a list of suggestions, was recently sent to fifty-eight city superintendents. Copies of the letter and of the suggestions were also sent to the teacher-training institutions together with a communication urging them to accept the invitations extended by the city schools. Later in the year the teacher-training institutions will follow a similar plan in reciprocating the hospitality of the public-school people.

The letter sent to the city superintendents reads, in part:

> The work of the State Teachers Association during the last year brought to us all a clear need for closer coordination of public school work and teacher training. This letter is written to suggest a definite plan to bring the teacher-training institutions to an increasingly better knowledge of public school needs. The public school people should in turn become thoroughly acquainted with teacher-training purposes, problems, and procedures.

Among the suggestions which accompanied the letter were the following:

> Invite representatives of teacher-training institutions—the state normal schools—to spend two days in your school system.
>
> Select those normal schools whose graduates are found in your school system in the largest numbers. This may mean four or five invitations.

Urge the principal to come if he can, with as many members of his faculty as can accept, or to send as many of his faculty members as he can.

Suggest those matters to which the visitors should give their attention. Mention several things which you are doing particularly well and which you would like to have the teachers' colleges and normal schools observe.

Request the principals to reply, furnishing a list of those who will accept and opposite each name the particular activities in which they are especially interested.

Upon receipt of their replies you can arrange a program for Thursday, March 14. The greatest part of the day should be spent in visiting the activities selected and in special conferences. A dinner meeting in the evening might be a feature of the program at which time your associates—principals, supervisors, and possibly teachers—could tell your guests of the purposes, procedures, and plans of your school system.

You should make provisions the next day, Friday, March 15, for your guests to visit graduates of their respective institutions at work. Early conferences with their principals and supervisors might be advantageous for the visitors. Later conferences with the graduates would be highly desirable.

The program should carefully guard against extravagant expenditure for entertainment and the exhibition of mere building and school activities that are not a part of your everyday program.

Such conferences as these and those which will follow later at the state normal schools furnish excellent opportunity for a number of things such as the wise placement of new teachers and the co-operative supervision of them during the first years of their experience. Superintendents can furnish normal schools in advance with definite information as to the number and kind of new teachers needed and when they will be appointed; and the normal schools can inform school superintendents also in advance concerning the prospective number of their graduates, the quality of their work, their personal characteristics, and the kinds of school service for which they are prepared. Superintendents will then have opportunity at the later conference at the normal schools to interview these students and observe their work.

VI

The final and, on the whole, the most important as well as the most difficult test of the practicality of a program of teacher training is concerned with curricula, courses of study, and quality of instruction. This subject has had a good deal of attention in recent years, and while much of value has been accomplished, we are still a long way from a satisfactory solution of this problem. Social institutions

in the community are much like habits of an individual. They are conservative in character and slow to change. So long as the life situations and procedures out of which they developed and to which they have become adjusted remain practically the same or change little and slowly, if they change at all, these institutions are satisfactory, and there is little cause to criticise or change them. But when the conditions and uses of life which they serve change rapidly, profoundly, and extensively, their conservative nature reveals itself. They get out of adjustment, and the people become critical and demand their reconstruction.

Such maladjustment reveals itself first in the case of those institutions which are in immediate touch with the crises arising out of the changing order of things. Those which are farthest removed from these crises are least affected at the beginning and their reconstruction usually comes last in the process of readjustment. Consequently, some of the more cloistered institutions of higher education seem to be practically unaware of any need of change either in curriculum or method, while the public elementary and high schools have been progressively undergoing reconstruction during many years.

For like reason our teacher-training agencies have been more tardy in adapting their curricula and methods of training to the changing requirements of the teaching profession than they ought to have been. Their contact with real needs has been too remote. They have clung too long to the traditions and practices of the past. Their look has been backward, often unconsciously, perhaps, but nevertheless backward, rather than forward into the actual needs and activities of those who are on the firing line of present-day requirements of teaching and supervision in the public schools. For this reason the *Commonwealth Teacher Training Study* conducted by Charters and Waples opens the way to a new order of things, because it centers attention upon the activities actually performed and the personal traits required for successful teaching in the schools of today. This study, however, is incomplete. Further studies dealing with other phases of the problem will have to be made, and in the use of the materials brought out by these studies in the construction of the curricula and courses of study for teacher training, care will have to be exercised if serious mistakes are not made.

To go to the extreme of constructing curricula entirely out of the one thousand and one teachers' activities set forth in the Commonwealth Study would be an unpardonable error. In fact the general drift in the recent construction of curricula for normal schools and teachers' colleges has already gone too far in the direction of

training for specific skills and abilities to the neglect of other outcomes that are equally important. Specific skills and abilities are needed, of course, but much more than these are required for successful teaching service. It is professional education rather than mere professional training of teachers that is needed. The two must not be confused. Professional education involves, of course, more accurate and thorough occupational analysis and aims at greater occupational efficiency; but it is not confined to mere expertness in professional practice. Its goal is the educated, as distinguished from the merely trained, professional man or woman ready to fill, in all respects, the place which such a person should occupy in the life of the community.

The teacher should be able to see and to value her own occupation in its relation to the other important interests and activities of the people. This is an essential part of her education. As the Commonwealth Study indicates, there are at least three types of objectives that should be kept in mind in setting up curricula for the professional education of teachers—educational, institutional, and personal objectives. These objectives are not, as yet, clearly defined. Moreover, they are constantly changing because the life needs and processes which the schools are intended to serve are themselves continually changing.

Nevertheless, these criteria are the best we have by reference to which the selection of materials and the organization of curricula and courses of study for professional education must be determined. It is therefore evident that such curricula must be subject to constant revision in the light of close and intelligent study of the educational needs in terms of which they must be defined. This is why the preservice and the in-service phases of teacher training must be so carefully correlated. What is needed for satisfactory service under present conditions is not the automatic practitioner, skilled in the use of stereotyped method of performing standardized activities which scientific study has discovered by analyzing what is now considered excellent teaching, nor a person who is steeped in theories of teaching and education that he has academically learned, but a teacher, the extent and character of whose professional education has prepared him to meet successfully the changing conditions, with the courage to attack and the ability to solve with increasing success the new problems that constantly arise. How to provide the training that will produce this result is the problem which our present programs do not satisfactorily solve.

Preparation of Teachers for European Schools

Edith E. Beechel[1]

The purposes of this discussion are two: first, to call to your attention some of the best features of the teacher-training programs of England, France, Germany, and the city of Vienna; and second, to make some suggestions for the improvement of our own. Two of the foreign programs are progressive and the other two are conservative.

The enrollment in European teacher-training institutions is small. It ranges from 120 students in the French normal schools to 260 students in the German pedagogical institutes. The number of entrants in any institution is determined by the demand for teachers. The number varies from thirty-five entering a French normal school to eighty-five entering a German academy, or institute. The number of members in a faculty ranges from ten to twenty-five. With the small enrollment in each institution it is possible for the faculty to know each student personally, which is one of the great advantages of the foreign teacher-training institutions.

The professional courses for teachers preparing to teach in the elementary schools of England, France, Germany, and the city of Vienna vary in length from four to eight semesters. An analysis of a limited number of the two-, three-, and four-year curricula offerings shows that a great deal of emphasis is placed upon the subjects of philosophy, psychology, and education in the new teacher-training programs of Vienna and Germany, while comparatively little time is devoted to these subjects in England and France. The curriculum for elementary teachers at the University of Jena for a period of six semesters is as follows:

	Semester Hours
I—EDUCATION	
General education (lectures or practicum)	6
History of education (lectures or practicum)	8
Public-school system	6
Principles of instruction (lectures or practicum)	8
Method of the elementary school (lectures or practicum)	12
School practicum (in second and fourth semesters)	8
Adult education	2
Youth welfare and school hygiene	2

[1] Ohio University.

II—PHILOSOPHY	
Systematic philosophy (lectures or practicum)	6
Ethics (lectures or practicum)	6
History of philosophy (lectures or practicum)	8
III—PSYCHOLOGY	
General psychology	4
Educational psychology (child and adolescent psychology)	4
Psychopathology (corrective pedagogy)	2
IV—ACADEMIC AND ELECTIVE SUBJECTS	28
V—OTHER GENERAL ELECTIVES	18
Total	132

It is safe to assume that the reasons why the subjects of philosophy, psychology, and education are receiving so much emphasis in Germany and Vienna are these: first, the "Revolutions of 1918" convinced educational leaders that their old theories of education were inadequate; second, new educational policies based upon modern principles of psychology, philosophy, and education had to be formulated; third, it is necessary for teachers to have a thorough knowledge of the basic principles of these subjects in order to do their bit in breaking down age-old barriers of social inequality; and fourth, in order to direct the work of an activity school it is necessary for teachers to know much about children—how they learn, and how to guide them in their learning. Although psychology, philosophy, and education courses are not emphasized in the programs of England and France, courses in the physical and natural sciences are, as can readily be seen in their schedules of study.

The emphasis placed upon observation, participation, practice teaching and experimental courses can be attributed to the fact that educators are earnestly engaged in the business of formulating new principles of education, organizing materials of instruction on the basis of the principle of integration, discovering new methods of directing the learner, and constantly testing and checking their results in order to make sure that their new modes of training teachers are satisfactory.

A most commendable feature in the progressive teacher-training programs of Germany and Vienna is the gradual induction of the novice into the serious business of teaching through a series of experiences designed to give him insight into the problems of teaching. Throughout his entire course the student "studies children" rather than "about children."

A comparison of the practice facilities available in England and France and those available in Germany and the city of Vienna is of interest. In the majority of the training colleges and university training departments in England, and in the French normal schools, the facilities for practical work are inadequate. On the other hand, facilities for the practical professional work are quite adequate in Germany and Vienna. Each institution has an experimental school, a practice school, and the schools of the entire city system at its disposal. The experimental school is used as a laboratory in which new materials of instruction are developed and better methods of teaching discovered. The results of the work carried on in the experimental school are then tested in the city system. At the present time 377 classrooms in Vienna are being used in a long-time experiment, a period of ten or twelve years, to test out materials of instruction as well as to discover better methods of guiding children's undertakings. Our teacher-training institutions would do well to engage in long-time experimentation in order to clarify their thinking on progressive issues to be used in practice. In Vienna and Germany professors and students spend much time in studying children in classrooms in order to discover the problems to be dealt with in education courses. This particular practice might well be incorporated in every program in our American teacher-training institutions. Through the plan used in Vienna and the German States, theory and practice are integrated because all faculty members are co-operating in the discovery of problems and in the development and evaluation of the new program for the training of teachers.

Another worthy feature of the work in Vienna and Germany is the well planned and extensive visitation program. Such work gives to the teacher in training a broad view of life itself rather than a narrow view of a small part of life. Where is there a teacher-training institution in this country that has taken its students to the sister institutions of the state or to the neighboring states to study various educational agencies? Shall this privilege forever be reserved for the football team and college glee club? One of our state requirements might well be a schedule of inter-school visitation trips, the purpose of which would be to put the students in direct contact with the various educational agencies of the state.

Almost forty years ago John Dewey established an experimental school in the University of Chicago. Today his educational theories are discussed in every teacher-training institution in the United States and in practically every foreign land, but it is to the educators of the city of Vienna and the states of Germany that we must give credit

for putting the theories into practice in entire public-school systems. We have 208 teachers' colleges in the United States, and out of this number, one, and only one, has been so bold as to formulate a curriculum and organize its work for the express purpose of preparing teachers to teach children rather than to present subject-matter.

We need experimental teachers' colleges whose business it shall be to discover how best to integrate theory and practice; to determine how much, or how little observation, and practice are necessary to prepare teachers to do effective work; and to issue from time to time to those responsible for the direction of the work in public schools of the country, bulletins regarding what constitutes good practice and why.

Village School Superintendents

New Types of Printed Materials for Teaching Reading

ARTHUR I. GATES[1]

EVERY TEACHER knows that a reading book alone, no matter how excellent it may be, does not teach a child to read. The teacher has heretofore been required to teach the pupils to read. This she has done by means of a number of supplementary materials on the one hand, and a variety of supplementary activities or exercises on the other. Supplementary materials such as practice sheets, charts and bulletin board exercises, flash cards, mimeographed and hectographed pages, and blackboard exercises are commonly purchased or made by the teacher and adjusted, as well as possible, to the fundamental reading materials and the needs of the pupil. Among the supplementary activities are different types of phonetic exercises and drills, flash-card work, rapid reading under timed conditions, word-study devices, and exercises in various types of comprehension. Every teacher is keenly aware, moreover, of the great amount of labor she must expend in the preparation of such materials and in the conduct of such activities. Most teachers are aware, furthermore, of the hit or miss character, the lack of satisfactory integration, and the inadequate character of the sequences in such materials and activities.

This discussion will be concerned primarily with the principles underlying the preparation of printed materials in convenient form to take care of all the demands of the modern course in reading. It appears possible, by putting into practice certain principles that have recently emerged from scientific study, not only greatly to conserve the teacher's time and energy but also to achieve great improvements in the reading ability of pupils by preparing in printed form an integrated course which incorporates activities designed to develop all the necessary reading skills.

TEACHING READING BY TOPICAL UNITS

Before taking up details of the new types of materials, certain general requirements that should be fulfilled in a modern course in reading may be suggested. First, reading should not be considered as a specialized, narrow, and isolated subject, but as one of a number

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of activities which enables children to exercise their natural inclinations and to provide growth in power and interest. The work in reading should be tied up with and contribute to a number of other activities which children are most interested in and which are most educative for them. The reading course should, therefore, be conducted in a series of topical units each one to give play to a variety of activities.

The results of a number of recent experiments and observations suggest that reading and the associated activities during the first three years may profitably be broken up into topical units running from three to five weeks, occasionally a little shorter or longer. The following are samples of topics found useful for the first year:

Life in the home
Life in the school
Familiar pets
Life on the farm and country
Life in a city
Christmas and winter activities
Friendly animals
Moving pictures
Springtime

During the third year, the following topics are found to be satisfactory:

Dramatic activities related to toys and familiar implements
Fairyland and fairy stories
Humorous events and stories
Fables and tales about familiar experiences
Bears and other animals
Stories, facts, and legends about our country
Stories and descriptive materials about other countries
Outdoor life
Magic plays, games, circuses

TYPES OF ACTIVITIES TO ASSOCIATE WITH READING

The plan is to provide a series of activities related to each of these general topics. Reading materials, such as stories, poems, and informative and other work-type selections closely related to each other, should be provided to give direction and impetus. The activities should also include the following types, which were suggested by John Dewey many years ago as the minimum essentials to round out a full-fledged experience with any topic.

Communicative activities.—Communicative activities include not only reading from the fundamental course but the search for stories

and informative materials related to the topic in various other books, magazines, and newspapers. Related information will also be secured by conversation with children in higher grades, parents, teachers, and other adults, and by consulting the library. Under communicative activities would also be included reading orally to the class or telling orally to the group facts secured elsewhere which bear upon the topic. Under the same category would be the writing of announcements, poems, and compositions.

Exploratory activities.—Along with the reading should go exploratory activities, which include not only mental explorations in books, magazines, and pictures, but visits to art galleries, museums, circuses, exhibits, factories, farms, and sources of raw material. Through these activities a better appreciation and understanding of the main topic may be achieved.

Artistic activities.—In connection with the topic and his reading the child should be provided with abundant opportunity to express his ideas by such means as drawing, coloring, modeling, decorating objects, and singing. Materials should be provided suitable to the child's ability to enable him either to select or create illustrations and decorations of the topic. Materials used in constructive and dramatic activities may also be artistically developed. In general, the reading should be correlated with a wide variety of artistic activities.

Constructive activities.—Constructive activities would include the making of booklets, news sheets, houses for pets, sand-table scenes, and real objects of many sorts. In many cases, the constructive activities would be the development of representations of some feature of home life, Indian life, animal life, or some other topic related to the main theme. This project might extend over the entire period and reach its culmination near the end.

Dramatic activities.—Along with the construction of scenes and materials as just suggested, the children may dramatize the stories or episodes encountered in their reading. In addition to the dramatization of smaller episodes during the period, the entire work may be culminated in a pageant or play, or some other dramatic event, to which other children or parents may be invited.

READING THE RESULT OF DESIRABLE ACTIVITIES

The first requirement, then, is that reading takes a place in the midst of a variety of activities. In order that reading skill may be achieved in a systematic manner which provides for continuous development without the danger of inappropriate habits, superficiality, and neglect of important techniques, it will be necessary to have a

core or minimum of materials which are carefully organized. In the preparation of such materials, and in relating the activities to them, a general theory should be followed. This theory has been well expressed by Professor Dewey in the following quotation:

> The question of method now takes on a new form. It is no longer a question of how the teacher is to instruct and how the pupil is to study. The problem is to discover what conditions must be fulfilled in order that studying and learning will naturally and necessarily take place, what conditions must be present so that pupils will make the responses which cannot help having learning as their consequences. The pupil's mind is no longer to be on study or learning. It is given to doing the things that the situation calls for while learning is the result.

Considerable experimental work has been done to find "what conditions must be fulfilled in order that studying and learning will naturally and necessarily take place" in the case of reading. The problem is to provide the activities in such a way that learning will result from the responses made by the children. Instead of teaching children in a separate period with phonetic exercises, flash cards, word drills, dissociated exercises in comprehension, and the like, learning will be achieved in the process of doing those things in which children are immensely interested. Desirable reading habits are acquired as the natural and necessary result of reading interesting and useful materials. The particular problem of finding a means of working into the substance of the best materials the arrangements that would make the learning of such habits and skill a necessary outcome has been studied over a period of years. During the last six years, some of us have made up, tried out in schools, reorganized and tried out again, various materials for this purpose. At the present time, the organization consists of a reading book and a workbook for each half of the first year and for each grade thereafter.

The reading book is, in a general way, similar to the conventional reader. It consists of a series of stories and poems organized in chapters, each of which is devoted to a topic such as those previously mentioned. The stories are written or adapted so as to provide an even and easy increase in vocabulary and complexity so that at no time will the child encounter materials of undesirable difficulty.

DEVELOPING RECREATIONAL READING

The workbook contains the materials necessary to enable the child to learn, without special teaching, all of the words, skills, and the concepts required for wide reading. It is not merely a substitute, but, I believe, a distinct improvement upon the array of blackboard,

phonic, flash-card, and other materials now commonly used. Each child has a workbook. It is arranged to be self manageable from the beginning. The teacher will need merely to give certain general instructions, and then let the pupils go ahead.

By meeting the situations and doing the projects suggested in the workbook, the pupils learn those things required for good reading. The materials in the workbook are arranged to give the pupils the vocabulary, the background information, and the particular skills and interests required for successful reading of stories or selections in the reading book. As soon as the pupils finish a set of activities in the workbook they are directed to take their reading books and read the appropriate story. They should then be ready to read freely with full understanding and real satisfaction, the appropriate selection.

After reading and discussing the selection, the pupils take up the various artistic, exploratory, and constructive activities. Eventually, they come back to the next section in the workbook, which not only prepares them to read the next reading-book assignment, but also enlarges, extends, refines, and tests their comprehension of the preceding selections in the reader. Thus, the pupils alternate between the closely interrelated and correlated assignment in the workbook and in the reader.

DEVELOPING WORK TYPES OF READING

The workbook does a great deal more than prepare the child to read stories and poems in the reader. It provides the experiences which enable the beginner to acquire a number of other important reading abilities. Many of these skills are now called "work types" of reading. The kinds of reading essential to the interpretation of directions for playing games, making posters or booklets, carrying out projects, or illustrating paragraphs and stories are here developed. The workbook makes reading the means of learning to draw and color pictures, decorate objects, select titles and illustrations for stories, or otherwise demonstrate comprehension of what is read. It elicits such reactions as reading to get the main idea, or the outline, or the emotional mood, or some significant detail in a passage. It trains children to find the answer to questions or the solutions of problems by means of reading. It gives pupils rich and joyful experience in thinking, interpreting, and planning. It almost automatically develops the most essential types of reading comprehension skills and extends the pupils' general acquaintance with features of community life and the world at large which are of value and interest to persons of their age and experience. Children learn not only how to read

but also how work and study and how to use what they have read in their daily lives. They gain a genuinely practical knowledge.

MASTERY OF USEFUL READING VOCABULARY

The workbook is organized, furthermore, so as to develop mastery of a fundamental reading vocabulary, skill in the independent recognition of new words, and ability to read fluently the thought units. In order to develop mastery of a fundamental reading vocabulary, two requirements must be met. First, materials must utilize to the highest possible degree words which scientific studies have shown to be most useful for reading the various types of superior material at each level. Second, these words must be used many times in a variety of contexts so as to provide for different amounts of experience to fit different individual needs. As contrasted with the typical reader, the workbook's materials provide both for abundant practice on the most useful words for adjustment of practice to individual differences. In the first half-year's work, for example, careful selection and reading of the reader have made it possible to provide most interesting and attractive materials with the use of only two hundred and eighty words. All these words, furthermore, are used frequently in the workbook which includes only twenty words in addition to those used in the reader, or a total of three hundred words for both books. The average reader provides for about sixteen repetitions per word, on the average, while the new type of organization provides about forty. The workbook materials also provide for constant check of the mastery of the words as well as for the various reading skills, so that it is possible to give experiences to each child in accordance with his needs. If the bright children require only one-half as much reading to master the vocabulary as the dull, both are easily cared for.

DEVELOPING THE FUNDAMENTAL MECHANICAL SKILLS

In order to achieve the objectives of reading, mainly, interest and satisfaction in the activities, appreciation of and taste for various types of good literature, accuracy, fluency, and fullness of comprehension, it is essential that each pupil acquire in addition to word knowledge, a number of subtle skills. These are usually termed, the fundamental mechanical skills. The difference between the development of these mechanical skills by the traditional supplementary procedure and the newer method of making them an intrinsic phase of worth-while reading situations may be illustrated by the treatment of phonetics. Phonetic drills are conducted to enable children independently to work out the recognition, pronunciation, and meaning

of new words or words that have been forgotten. Frequently, the phonetic work is supplemented by drill on flash cards and other devices, as a means of developing ability to perceive words in thought units, as well as to analyze them in details. Although such special work is often serviceable, it is, by no means, economical of time and free from the dangers of setting up undesirable habits.

DEFECTS OF CONVENTIONAL PHONETIC METHODS

One deficiency of supplementary exercises of these types is that they depend too much on the transfer of training. Careful experiments have shown that the skills acquired in the supplementary training do not always transfer abundantly to real reading of the printed page. For example, pupils who have learned the phonetic families and means of attacking isolated words phonetically in the activities of the phonetic period often do not carry over these abilities to the normal reading work. It is one thing to do the phonetic exercises and another thing to use them in reading for the thought.

A second deficiency in phonetic exercises of the usual type is that a great deal of time is spent in sheer word analysis activities which provide no experience in reading for the thought. The pupil is dealing primarily with word-forms rather than with ideas.

A third defect is that such drills as phonetics often fail to develop certain abilities of utmost importance for the recognition of words during normal reading. For example, phonetic drill alone does not adequately encourage the habit of using context clues in trying to recognize words. Certain habits of "guessing" the word from the meaning of the phrase or sentence which contain it are of greatest value and should be carefully developed.

A fourth deficiency of the typical phonetic method is that it frequently results in overemphasizing certain habits until they become detrimental. For example, the habit of picking a word into its small phonetic pieces, while useful in moderation, is often overexercised until the pupil loses his ability to take in words clearly and easily as wholes. The pupil gets to a point where, so to speak, he fails to see the forest because of the trees.

INTRINSIC METHOD OF DEVELOPING MECHANICAL SKILLS

The new or intrinsic method depends upon two new devices. The first is that of providing adequate, but carefully arranged, experience in utilizing clues gained from the context on the one hand, and word-form clues on the other, as means of working out the perception, pronunciation, and meaning of new words. In the primary

grades, great care is given to the way in which new words are introduced in context so as to encourage the child to use the context as a means of guessing the word correctly. This is done by introducing each word in a sentence or paragraph which is made up of familiar words, with the exception of the new one. Words are not thrown in hit or miss. The setting for each new word must be carefully planned. Thus the child's use of the context is fostered because it will prove hopeful in determining the meaning of the word. As the pupil gains in power to recognize new words, greater provision is made for the exercise of his ability.

The new plan involves, furthermore, the gradual development of ability to perceive phonetic elements and various similarities and differences among word forms. After a word has once been introduced and reviewed a few times in new settings, it is arranged in comprehension exercises so as to throw into relief the elements or general characteristics which it has in common with other known words. Thus, by continually seeing words which have such common elements as *ing*, *ed*, *all*, the child, with little assistance from the teacher, soon learns to recognize these elements by themselves and to use them as means of improving his perception of words and deriving the recognition and meaning of new words. The following illustration is one of a series of workbook selections which give background information for fairy stories and teach the children to use a sort of pictorial map of fairyland. The child first reads the selection and then completes the exercise. The next one follows in order, and gives the child instructions to read a story in the reader. After he has read the story, he comes back and does the comprehension exercises in the workbook.

THE BROWNIES' BUBBLING POT

The brownies took Silver Wings to their Bubbling Pot to make a wish. The biggest brownie began to strike the pot. "What is your wish, Fairy's Child?" he said.

"To be changed into a brownie for just three days!" answered Silver Wings.

All thirteen brownies touched Silver Wings on the head. When this was done, a new brownie stood before them.

"Now," said the biggest brownie, "you may go to live in the house with the Cook and the Mewing Cat. You will live down in the darkest corner of the coal cellar. You must not play any tricks! You can't be lazy, either! Be a very, very good brownie! And at the end of three days come back to the Bubbling Pot."

What do you do at a Bubbling Pot?
Make watches
Make ashes
Make wishes
Into what was Silver Wings changed?
A new brownie
A new brown hat
A new brown eye
Read the story of "Brownie and the Cook," in the reader, pages 38-46. Then answer the following questions:
1. Where did Brownie live?
in a coal cellar
in a coat closet
2. What was always left for Brownie to eat?
a bowl of milk
a barrel of meat
3. What did Brownie leave on the tablecloth?
black footprints
black feathers
4. Who did the cook think had been on the table?
fat, rat, cat, hat
5. What did Brownie change into?
a house
a mouse
a monkey

It should be noted that these exercises tend gradually to develop an effective perception of words and ability to handle familiar word parts when and where they are needed, namely, in the actual process of reading for the thought. It would be utterly impossible for a child to solve correctly any of these exercises, except by chance, unless he has in mind the thought and, at the same time, carefully distinguishes the word which carries out that thought from other word forms that contain similar elements. In this way, the skills commonly developed by phonetics apart from thought-getting situations in word-calling exercises are here trained to function simultaneously with the habits of using context clues. Thus, the mechanical and thought-getting training are not separated, but combined. The pupil learns to use word-form clues and context clues together by being constantly trained always to attack new and unfamiliar words, as well as to distinguish among familiar words in this way. By learning to utilize all available clues simultaneously, pupils in experiments which have been conducted, have shown extraordinary ability in the independent recognition of words and word groups. These skills come as a natural and necessary result from reacting to reading situations exclusively for

the purpose of securing the satisfaction and ideas in the reading process itself.

SPECIFIC ADVANTAGES OF INTRINSIC METHODS

The reasons why this newer procedure works so well are fairly obvious. First, there is no dependence upon the transfer of training of these skills from the non-reading situation to a reading situation. The skills are developed in the actual process of reading and are natural results of these processes. Second, these exercises do not require any extra time. The essential elements are made an intrinsic phase of comprehension exercises that are justified in their own right. The devices are worked into reading situations that we should have in any case and do not detract in any way from the merits of these exercises nor require any additional time. Phonetic drills and word-calling exercises are entirely dispensed with. Third, the newer exercises force the child to use context clues and word-form clues at the same time. Fourth, inasmuch as the words introduced into these exercises have not been previously learned, it is practically impossible to set up artificial situations that require a keener perception of words than actual reading situations are likely to provide. In other words, the scheme used does not permit the introduction of new words merely to make the exercise difficult or to emphasize some phonetic element that is not needed. It presents together words that the child already has used and is, therefore, likely to encounter together. The child may distinguish words he has been using, but it is not reasonable to expect him to distinguish any word he has used from the most seductively similar words in the entire English language.

INTRINSIC METHODS FOR DEVELOPING WIDE PERCEPTION SPAN

Although space is not available to give details, the same underlying principles are utilized in developing a quick and wide perception of words, an ability to read words in thought units, a wide eye-voice span, and other so-called mechanical habits. From the results of experiments performed in the last six years, there is every reason to believe that all the mechanical habits in reading can be taken care of by similar methods. The new theory which insists that all mechanical skills be the natural and necessary result of reacting to worth-while reading situations seems entirely sound. All that is needed is ingenuity in arranging interesting and otherwise useful reading materials in such a way as to produce these skills. The situation is entirely encouraging because in educational history it has commonly been true that once the general theory has been demonstrated, we can

count upon the ingenuity of teachers to put it into actual practice. The main functions of the new printed materials comprising the workbook have now been mentioned. Two of these functions, perhaps, justify a few further words. The first of these is the function of the workbook to develop abilities, which, while closely correlated with reading, are not identical with it. The second is the function of the workbook as a means of frequently measuring abilities and detecting difficulties, weaknesses, and inappropriate habits.

READING AND OTHER VALUABLE ABILITIES

As stated earlier, the workbook includes such activities as coloring, drawing, solving practical problems, using various materials, and conducting dramatic episodes. To illustrate concretely what may be done, one or two projects in the first half-year workbook will be mentioned. A story is given of an accident involving an automobile, a policeman, and a boy's dog. After this story has been read by the pupils, the teacher mentions the newspaper reporter, and how, if one had been on the scene, he would have reported the events and, perhaps, would have asked the policeman to verify his own observations. Then, she tells how this reporter would go to the office and write the story of the episode, how this story would go to the editor who would check it, perhaps rearrange it, and finally how this story might appear in the next day's newspaper. The workbook provides not only for reading the story, but for making it up from passages printed in mixed order. The children cut out the passages and arrange them in proper order, and confer together on the accuracy of the account. They may then refer their accounts to the teacher or to another child, who is designated as editor. When it is approved, the slips of paper are pasted on another page which is entitled, "The First Grade News," with an illustration of the episode and a typical newspaper heading. This begins the projects of this character.

Another illustration concerns the development of ability to interpret maps. In the first grade, the children draw a map largely in the form of a concrete picture of their home, and its immediate surroundings. Some of the children make a sand-table reproduction of their home, or of the school locality. Thus, the first map work is of concrete character and includes only a limited area. In the second grade, the children have exercises with a map of Fairyland which is provided in the workbook along with a series of reading exercises which give the children things to do with this map. This map is more complex and abstract than the first-year map, yet the brook, castles, bridges, and so on are drawn in pictorial form. The children are

instructed to color and add to the map in accordance with the stories they are reading. To make the map more concrete, they may reproduce it by using actual materials in the schoolroom. In the third grade exercises are given with maps of a still more inclusive and complex character. The three outstanding trips between America and Europe, the trip of Columbus, the trip of the Pilgrims, and the more recent trip of Charles Lindbergh, provide the subjects for these exercises. The children trace these voyages and are incidentally told about the different means of transportation, the different lands, and the different characteristics of peoples on both sides of the Atlantic.

DIAGNOSING ABILITIES AND DIFFICULTIES

Nearly every page in the workbook provides for a check of comprehension. The materials are so arranged as to check not only word knowledge, but also comprehension of phrase, sentence, paragraph, and story; comprehension over the briefest intervals, and comprehension and memory over longer intervals; ability to work out the perception and meaning of new words in context; and ability to read fluently by thought units. Thus, an objective record of achievement and an objective determination of difficulties can be secured at any time. The purpose is not, however, continually to test the child; certainly not to have him work under the stress of a time limit or the examination spirit. The workbook materials, when properly handled, are used with all of the freedom, ease, and satisfaction of thrilling story materials. Even then nearly all of the desirable checks can easily be secured. Indeed, when properly used, the materials are far less exacting than the conventional reading course. This is true because the children can work for the most part by themselves or with each other. They can and should correct practically all their own work. The teacher can then avoid the odium of constant interrogation and imposition and devote herself to those pupils needing help.

PROVIDING FOR INITIATIVE AND ORIGINALITY

The materials and course described are organized to provide progressive development and an unusually large amount of spontaneous self-initiated activities along artistic, constructive, and exploratory lines. The materials give the child many suggestions for further things to do, such as planning the construction of a home for a pet, developing a dramatic episode, decorating the schoolroom, or visiting the farm and museum. Thus the work in reading provides the fundamentals necessary for the most enjoyable and productive activities. The child has the equipment to make his activity creative.

Education for Character and Citizenship

W. O. Thompson[1]

Happily this topic requires little of the entanglement of definitions. The principal ideas are represented in these words: education, character, and citizenship. The man in the street has certain definite conclusions as to all three of these words, albeit he has limited ability to indulge in or carry on the technical questions and implications growing out of definitions. All this is left for the vocation of the professional educators. The question remains, therefore, whether for all practical purposes we not assume the soundness and value of the permanent ideals of this same man in the street and proceed to evaluate our education.

The citizen thinks of education as a process of improvement fitting one for a larger life. This may not be quite so academic as the oft quoted thought of education as fitting us for complete living, but it comes to the same thing in the citizen's thinking.

As to character we may assume that he has not looked into the dictionary, nor has it occurred to him that the word character etymologically comes from the idea of an engraving on a coin. Much less has this citizen made an exhaustive study of all the nice differences set up in our educational literature. Character is to him a word in common use more profound in its significance than any definition could make it. He thinks in terms of the concrete and practical. When he thinks of character, he thinks of a person embodying and illustrating the graces of mind and heart universally admired. Sometimes the racial idea is in mind when a citizen speaks of the French or the German, the Irish, or the Scotch character. He would not engage in an extensive analysis but instantly center upon the outstanding qualities in these people as evidence of their character. Who is there indifferent to the qualities of loyalty, integrity, courtesy, graciousness, and loveliness? This citizen might name scores of other graces and virtues as contributory to character. He will even recognize selfishness and self-centered habit as revealing character. It would never occur to him that character was unimportant or non-effective. He will think of it as an asset and as a living force in the social order. Do you think we have gone much beyond the plain citizen in our appreciation or knowledge of what character is?

The word "citizen" is a descriptive term. The citizen thinks of his relations to his fellowmen, to his government, and to the duties that devolve upon him. In a democracy the citizen is the

[1] President emeritus, Ohio State University.

unit of the social order. He is the object of supreme interest on the part of those who think in terms of a social order. The ordinary citizen is quite apt to think in terms of an efficient unit as the vital fact and determining factor in any social order or in any program of progress in which government may in any degree be interested. This is fundamentally why the citizen looks to education with the same welcome we accord to the rising sun.

The citizen evaluates education as a way of life, as a way of enlarged living, as a way of escape and salvation from much in life and the world that is untoward and undesirable; as a way of achievement making possible the realization of high purpose and as opening the gateways of a liberated mind and life. He believes that education stimulates a way of life in which conduct, behavior, and experience develop the ideal character.

All this points to the important issue as to the quality of education to which we are exposed. We recognize that education is caught rather than taught. Teaching there will be. It is inevitable. The finest elements of education arise out of personal contacts. The quality of the teacher is the decisive and deciding factor in the development sought in the education of the generation. To be sure the Robot has arrived. He could not stay away. In fact he has always been with us. Too long we have been the echoes and sounding boards of the master minds as they speak to us through the books and the dictated lecture. Diogenes has now changed his quest to that of a search for a teacher of serene, beautiful, and spiritual quality whose human interest and love of learning have given him an unquenchable passion for carrying the torch of light and life.

From this point of view the citizen evaluates education from the premise of racial improvement, of social elevation, and of individual progress. He cannot be indifferent to the standards or the fruits of education. He is intimately interested in the processes of education because he still believes in the law of cause and effect notwithstanding the fact that he reads from high authority that this law is no longer in operation. He is interested in the ideals that motivate all educational processes. This citizen believes profoundly in what he conceives to be truth and principle. He believes in the supreme value of the teacher as the living agent by which education is developed. He is not nor can he be indifferent to the character of the teacher. To him the student has some inalienable rights—the native right to an unbiased progress of his individual personal qualities.

This citizen as a parent or as a citizen may rightly protest against what we now call propagandism, the new name for the old sectarian-

ism or the desire to mold the thinking of a growing child by imposing personal views upon the student. He objects to much of the *ex cathedra* method found in some teachers and to the dogmatic presumptuousness of others. This citizen is no slave to standardization but thinks life and character are too precious to be made the curious experiment of every unstable mind. Nor is he infatuated by the assumed authority of many textbook makers. He believes that growth and progress are possible under freedom and the right to inquire concerning the voices of the past or present who would point out the high road to our educational goals.

This citizen, when he once becomes active in something else than providing the revenues for education, may have much to say to us for our profit. There is no such thing as an infallible and inherent aristocracy in education. Educators may sometimes assume too much and fail to see themselves as others see them. Our citizen is deeply interested in the fruits of education. He is quite apt to base his judgment upon the citizenship of the educated. We would do well, then, to observe carefully the way our students fit into the social order. The pragmatic test of performance will be observed by the citizen and may well be given consideration by the teacher. Too often the teacher assumes that Commencement Day ends his obligation. It were nearer the truth to assume that it is just beginning. The legitimate fruits of education and educational theory do not ripen in our high school and college days. They are not then due. The harvest season for our educational processes is often delayed until the maturity of the late twenties or the early thirties. Too often we assume that the fruits are safely garnered in the library, laboratory, or classroom. Education is a life process. The trend of life—its direction—is quite as important as any particular result achieved in our processes of education and training.

The citizen is quite likely to evaluate education from the point of experience rather than from an attachment to an academic theory. Here is where the professor and the citizen sometimes part company. The citizen believes that the school is responsible for much that appears in matured life. The school or the teacher is prone to measure his responsibility from day to day with indifference as to the future.

Is there not some common ground that both interests may occupy? May we not cherish the hope that citizens may be better educated and teachers better informed? The situation surely challenges us for a clearer brain and a certain large mindedness in our effort to see the value of the processes in our most highly cherished

institution—the school. The day has long past when we may separate the town from the gown. The school or teacher lacking in an adequate appreciation of the social and civic values in education is as far astray as the citizen who fails to see the values in education because he does not understand them. If character be important in both teacher and citizen, then we may cherish the hope of better understandings in the interest of the rising generation—our greatest asset or liability. On such co-operative effort of society as a whole will depend which it shall be.

Finances in County School Districts in Ohio

H. H. Davis[1]

School finance in county school districts, as in other districts has three basic divisions—revenue, custody, and expenditure. School executives are subject to the same economic laws that govern individuals. They must obtain funds, arrange to safeguard the money while it is in their custody, and provide for its wise and economical expenditure.

So far as local executives in the county districts are concerned, the sources of revenue as well as the methods of obtaining it are rather definitely fixed by law. The duty of the individual local executives, therefore, is mainly to familiarize themselves with the laws and to take proper and timely steps to utilize them. Collectively, however, executives in county school districts have the further duty of studying the revenue laws under which they operate in order to make intelligent suggestions to the legislature for their amendment if amendment be needed. Many of the problems in this field are due to inequalities of resources in local school districts, and many of the suggestions for legislative action deal with ways of reducing such inequalities.

Our State Department of Education has under way a comprehensive survey of school finance in Ohio which has progressed to the point where some of the figures are in usable form. The range in taxable wealth per pupil day extends from $23.92 in the poorest county to $126.28 in the richest. These are average figures for the whole county districts and exclude cities and exempted villages. It was secured by dividing the tax duplicate by the aggregate days of attendance. We use this measure because costs are so generally computed on the attendance base. It will be evident that the varia-

[1] Ohio State University and State Department of Education.

tion between the poorest district in the poorest county and the richest district in the richest county will be much greater than the above.

The matter of custody is also well covered by law, which is as it should be since the major point to be considered there is safety of funds. It is true that some income can be obtained from interest on funds held by school boards between collection and expenditure, and that, with safety of principal assured, an effort should be made to secure the best rate obtainable.

The expenditure phase of school finance is the one where the greatest liberty is left to the local executives and hence is the one which offers the greatest opportunity for the exercise of local wisdom. The first duty of local executives is to collect and interpret the facts of their own financial condition. The superintendents of county school districts should know more about the cost of their schools than does anyone else. This means, among other things, unit-cost accounting, first by pupils for the school, then by pupils for each grade and subject.

We have found in the survey previously mentioned that the average salary cost per day for all schools of a county district varies from 21 cents in the lowest county to 39 cents in the highest. We have some high schools showing an average annual cost per pupil of $250 or more. I have heard of some one-room rural schools in this state where the cost per pupil runs to two or three hundred dollars annually. J. L. Clifton, State Director of Education, in his doctor's dissertation shows that the average teacher-salary cost of English in high schools with enrollment below fifty is $8.71 per pupil semester while the cost of Latin is $21.00. Similar data for high schools with an enrollment three times as great showed $6.00 for English and $9.75 for Latin. I heard of a first-grade high school a few days ago with six pupils studying manual training, at a teacher-salary cost of $80.00 per pupil year. I mention these random samples to show the need for and the results from unit-cost accounting. The questions which they raise will be apparent to school executives.

But teaching costs are not the only expenses of schools. Instructional salaries, according to the state survey, comprise 75 percent of the current cost in one county and only 44 percent in another, with a median at about 56 percent. Hence it appears that when we have the salary cost analyzed we are only a little more than half done.

To secure true unit costs we must have the total of four divisions of expense which are fundamental to all schools. These divisions of cost arise from the four basic elements of any school, namely, pupils, teachers, setting, and supplies. Each of the four elements costs

money. The expense incurred by the pupil element is that of securing his presence at school, providing for his comfort while there, and in keeping him in condition to profit by instruction. The expense of teachers is largely salary though supervision, employment cost, and the like are sometimes present. The setting cost, which includes heat, light, janitorial service, depreciation, and interest on investment, is best computed on the basis of floor-space units. Supply cost comprises expense of instructional supplies used in teaching.

Much must be known concerning floor-space usage, plant cost, and supply expense before accurate data can be compiled for the true cost of any given school activity. Some will protest that it is too much to expect of an overworked schoolmaster, but if you wish your local business men to have confidence in your ability as a school administrator such facts are invaluable.

It may be proposed that other expenses vary in proportion to the salary cost and hence can be provided for by merely applying the ratio of instructional cost to total cost. That same relationship exists is true, but that it is not a constant can be easily shown. Transportation cost for example does not correlate with teacher-salary cost per pupil. In the example of manual training mentioned a specialized classroom was provided for the six pupils. This room remained idle during three-fourths of the day when the six pupils were studying other subjects. The teacher, however, could teach other things. Hence the other than salary cost of this subject was even more out of line than the salary cost. In a detailed unit-cost study of a city high school—not in this state—I have found teacher-salary cost to vary from 16 percent of the total cost in metal-shop classes to 65 percent in English.

Since there is a limit to the resources of most school districts there is also a limit to the kind and amount of education they can provide. Almost any sort of proposed educational activity has some merit—and costs some money. Therefore, it becomes necessary to put them all upon the scales to find how much merit and how much cost. Then it becomes your duty as local school administrators to select from the various possible educational offerings so as to enable the community to get the most for its educational dollar.

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